

Hispanic Births in Massachusetts 1996-1999

Volume I: Statewide Data

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Technical Foreword

Focus of this report

This is a report about Hispanic births in Massachusetts, including all births from 1996-1999 to women residing in Massachusetts who identified their ancestry on the birth certificate as one of the following: ***Puerto Rican, Dominican, Mexican, Cuban, Colombian, Salvadoran, Other Central American, Other South American, or Other Hispanic***. Volume I contains graphs, tables and accompanying narrative, which highlight the key findings at the state level. Volume II contains data for Massachusetts cities and towns with more than 200 Hispanic births over the four-year period. The comparison group for these analyses is White non-Hispanic mothers. Note that the ethnicity of an infant is based upon the self-reported ethnicity of the infant's mother. The use of the term "Hispanic" was chosen to be consistent with statistics on ethnicity compiled by the federal government and other government agencies.

The purpose of this report is to provide data describing characteristics of births to Hispanic mothers in Massachusetts. It is not within the scope of this report to provide more complex analyses of birth outcomes among women of Hispanic ancestries. As such, this report does not provide measures of statistical significance. Rather, this report presents important baseline data on perinatal health outcomes of Hispanic mothers and infants in Massachusetts for 1996-1999.

The first edition of the report "Hispanic Births in Massachusetts", published in 1989, covered 18 months of birth data from July, 1986 to December, 1987. "Volume I: Facts and Figures" presented state-level data, and "Volume II: City Data Book" presented data for the 10 largest Hispanic communities. Since the late 1980s, the number of annual births among all Hispanic ancestries has increased considerably in Massachusetts, from approximately 5,430 in 1987 to 8,815 in 1999.

The *Hispanic Births Report Task Force*, comprising representatives from the community of Hispanic health service providers and researchers, considered options for which ancestry groups to include for the report that would provide the maximum amount of information for program planners, community advocates and policy makers throughout the Commonwealth. We have used data for all subgroups where there were an adequate number of births to support the analysis. We have combined categories on some city tables, creating a Central American category (Salvadoran plus Other Central American) and including smaller subgroups in the Other Hispanic category. In addition, the Task Force recommended providing analysis by mother's birthplace and combining the mother's language preference and mother's birthplace variables to construct a crude acculturation measure.

The three categories presented for mother's birthplace are: U.S., Puerto Rico & U.S. Territories, and Non-U.S. Mothers born in Puerto Rico and U.S. Territories are U.S. citizens, and as citizens, once in the continental U.S., have access to the full range of programs available to U.S.-born individuals. Chapter 7 further explores differences in

birth outcomes between categories of mothers defined by their birthplace and language preference among Puerto Rican, Dominican, Central American, South American and Other Hispanic mothers. In this chapter only, birthplace categories were limited to continental U.S.-born and non-continental U.S.-born because of the small numbers of Puerto Rican mothers born outside the U.S. and Puerto Rico, and the small numbers within other Hispanic groups born in U.S. Territories. In the case of Puerto Rican mothers, we were interested in comparing mothers born in Puerto Rico (51%) to mothers born in the Continental U.S. (48%). Although Puerto Rico and other U.S. Territories are part of the United States and people born there are U.S. citizens, the socio-economic and cultural experience of people born in Puerto Rico and other U.S. Territories are very different from the experience of people born in the continental U.S. Furthermore, these different experiences are associated with differentials in perinatal outcomes.

NOTE: For the purpose of this report, the term "Continental U.S.-born" and "Mainland U.S.-born" are interchangeable. The term "Continental US-born" is more consistent with other published materials and includes women born in all 50 States and the District of Columbia.

Changes in birth data

In 1996, Massachusetts implemented a major revision to the birth certificate form and installed a new Electronic Birth Certificate (EBC) system in Massachusetts maternity hospitals. As a result, beginning with 1996 birth data, there is new information that was previously not available (such as the mother's language preference) as well as greater specificity in some of the data elements which more correctly reflects the populations under study. However, the transition to the new format affected several data elements, and not all data elements presented in this report can be compared precisely with previously published data. *Hispanic Births in Massachusetts: 1996-1999* presents, as closely as possible, natality data in a form that is consistent with data from 1995 and previous years. Changes reflected in the calculation of the Kessner Adequacy of Prenatal Care Index make comparison of data for prenatal care presented in this report to data prior to 1996 inappropriate. Other data items are comparable over time, but may be affected by minor changes in data collection, recording, and coding.

Notes on Data Sources

All of the information on Massachusetts births contained in this report is based upon data from the Massachusetts certificate of live birth. This report provides data on the 9 detailed Hispanic ancestry groups, which mothers select themselves on their infants' birth certificates.

There are a few limitations to using 1990 and 2000 census data. Although the 1990 census data are the most recent data currently available for age, education and socioeconomic status, they do not reflect changes in the population during the past 10

years. Second, there are known inaccuracies in census counts, including for Hispanics. The net undercount is one measure of this inaccuracy. There are two approaches to measuring the undercount¹. One method uses birth and death records, immigration records and previous censuses to estimate the true population. This estimate is compared to the census count to measure the difference. The Census Bureau also conducts special surveys to measure the undercount. A scientific sample of census blocks are re-interviewed independently of the census enumeration. The results of these interviews are checked against the census records on an individual basis to see who was missed and who was counted in error. However, underlying the steady improvement in the national average undercount is a persistent differential undercount for Hispanic Americans, Native Americans, Blacks, and Asian and Pacific Islanders. These groups tend to be undercounted more than White non-Hispanics due to social and geographic factors. The Census Bureau estimated the 1990 net undercount in Massachusetts to be 0.5% but there were significant differences among minority groups. It was estimated that the undercount of Hispanics in Massachusetts was 5.5%, while Whites were overcounted by 0.1%. Information on the estimated 2000 net undercount in Massachusetts was not available when this report was released.

1. *1993 Research Conference on Undercounted Ethnic Populations*. U.S. Bureau of the Census web page, <http://www.census.gov/dmd/www/pdf/understate.pdf>.

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EXECUTIVE SUMMARY

Overall Implications

The Hispanic population in Massachusetts is large and heterogeneous. Grouping all Spanish-speaking people together into one undifferentiated community does not fully account for intercultural distinctions¹. There is more variation among the different Hispanic groups in health status and outcomes than between the Hispanic population overall and racial groups such as White non-Hispanics. These differences within the Hispanic population have substantial implications for health program development and health policy. Overall, Salvadoran and Puerto Rican mothers were more likely than other Hispanic groups to have specific characteristics that may be associated with adverse birth outcomes. Puerto Rican mothers were more likely to be under the age of 20, less likely to breastfeed and more likely to smoke during pregnancy than White non-Hispanics and other Hispanic mothers. In addition, Salvadoran and Puerto Rican mothers were less educated, had the lowest percentages of adequate prenatal care and one of the highest percentages of public funding for this care, compared with other Hispanic groups as well as with White non-Hispanic mothers. Furthermore, over 80% of Salvadoran mothers preferred to converse in Spanish² rather than in English, which may have presented linguistic barriers throughout their cycle of care.

Demographics

According to the 2000 US Census, there were 428,729 Hispanics living in Massachusetts, constituting about 7% of the total population. The Puerto Rican population comprised the largest group with approximately 47% of all Hispanics in Massachusetts. Puerto Ricans were followed by Other Hispanics (19%), Dominicans (12%), Mexicans (5%), Other Central American (5%), Salvadorans (4%), Other South American (4%), Colombians (3%), and Cubans (2%).

The Hispanic population was the largest minority group and the second fastest growing population group in Massachusetts. While the overall population growth in Massachusetts was only 5% between 1980 and 1990, the Hispanic population grew 104%, from 141,043 to 287,549. For the period between 1990 and 2000, the Hispanic population continued to be the second fastest growing population (49%) in Massachusetts. A 76% increase in the number of Mexicans and a 72% increase in the number of “Other Hispanics” fueled much of the nearly 142,000 increase in the number of Hispanics between 1990 and 2000. This growth varied substantially by geographic location within Massachusetts.

¹ Shorris, E. (1992) *Latinos*. New York: Norton.

² Information on the mother’s language preference is collected from the mother at the time of birth, based on the birth certificate question, “In what language does the mother prefer to read or discuss health-related materials?”

According to 2000 Census data, the Hispanic population continued to be concentrated in urban areas, but the Hispanic population was somewhat more dispersed than in 1990. Within communities where Hispanics resided, the distribution of ethnicity groups varied enormously. For instance, in Springfield and Holyoke, the largest group was Puerto Rican (85% and 88%, respectively), while in Somerville, 31% of the Hispanic population were Salvadorans. The percent of the population that is of Hispanic ethnicity also varied greatly by community. The Hispanic population in Lawrence accounted for 60% of the total population of that city. In comparison, the Hispanic population in Chelsea, Holyoke, Springfield, Worcester and Boston accounted for 48%, 41%, 27%, 15% and 14%, of the total populations in those cities.

Based on 1990 Census data³, Hispanics had a lower percentage of college graduates compared with the state overall and also a higher percentage of persons with less than a high school education. In addition, Hispanics had a lower average household income in 1990 and a higher proportion below the poverty level than the statewide averages.

Births

During 1996 through 1999, there were 33,437 births among Massachusetts women of Hispanic ancestry, constituting 10% of all births in the state. The majority of these births occurred among women of Puerto Rican ancestry (52%), followed by Dominican (17%), Other Central American (7%), Salvadoran (7%) and Other South American (5%).

The average annual number of births to Massachusetts women of Mexican ethnicity increased by 153%, from 123 to 311, between the periods 1986-1987 and 1996-1999. Likewise, the number of births to Puerto Rican and Dominican mothers increased by 28% and 111%, respectively between these two time periods. In contrast, average annual births to Cuban women declined by 20% between the two time periods - from 108 per year in 1986-1987 to 86 per year in 1996-1999.

Six out of every ten Hispanic births in Massachusetts were concentrated among residents of 6 cities: Boston, Lawrence, Springfield, Worcester, Holyoke and Chelsea. Over one-third of all Hispanic births in the state occurred at three hospitals: Baystate Medical Center, Brigham and Women's Hospital and Lawrence General Hospital (13%, 13%, and 9%, respectively).

Maternal Demographics

Hispanic mothers were more likely to be teenagers than White non-Hispanic mothers in the state. Twenty-nine percent of Puerto Rican mothers were under the age of 20, compared with 5% of White non-Hispanic mothers. "Other Hispanic" (21%), Dominican (15%), and Salvadoran (12%) mothers were also more likely to be under 20 years old than White non-Hispanic mothers. Hispanic mothers were less likely to be married when they gave birth than White non-Hispanic mothers. Sixty-one percent of all Hispanic mothers were unmarried compared to 18% of White non-Hispanic mothers. Puerto Rican mothers had the

³ Age data by ethnicity groups and education and socioeconomic data for the 2000 Census were not available when this report was released.

highest percent of unmarried mothers, 72% while “Other South American” mothers had the lowest, 23%.

The majority of Hispanic mothers were not born in the continental U.S., with the exception of Cuban and “Other Hispanic” (51% and 70%, respectively, were continental U.S.- born). The majority of Hispanic mothers also indicated a preference for the English language rather than Spanish⁴ (ranging from 51% for Mexican mothers to 86% for Cuban mothers). However, Dominican, Colombian, Salvadoran and “Other Central American” mothers preferred Spanish to English (ranging from 61% for Colombian mothers to 82% for Salvadoran mothers).

Almost 90% of mothers who classified their ethnicity as Hispanic also classified themselves as “Other Race”. These percentages were lowest for Cuban and “Other South American” mothers (56% and 61%, respectively); thirty-seven percent of Cuban mothers and 34% of “Other South American” mothers classified themselves as White. Hispanic mothers, on average, had less formal education than White non-Hispanic mothers, with a lower percentage of college graduates and a higher percentage of women with less than a high school education. Cuban and “Other South American” mothers had the highest percentages of more than a college education (16% and 12%, respectively), which were comparable to White non-Hispanic mothers (13%).

Compared to continental U.S.-born Hispanic mothers, non-continental U.S.- born Hispanic mothers had lower percentages of unmarried mothers (56% vs. 71%), teenage mothers (under 20), (16% vs. 32%) and preference for the English language (39% vs. 86%). In contrast, a lower percentage of continental U.S.-born Hispanic mothers had less than a high school education (27% vs. 34%).

Maternal Risk Factors

From 1996 to 1999, mothers of Hispanic ethnicity were less likely to smoke both prior to and during pregnancy than White non-Hispanic mothers. The percentage of Hispanic mothers smoking during pregnancy varied greatly, ranging from 1% to 14%, averaging 9% overall. Puerto Rican mothers had the highest rate of smoking during pregnancy when compared to other Hispanic groups. Salvadoran women had the lowest rate of smoking during pregnancy, at less than 1%. Hispanic mothers born in the Continental U.S., had a higher rate of smoking during pregnancy (16%) than mothers born outside the Continental U.S. (5%).

The prevalence of selected medical risk factors was higher among Hispanic mothers when compared to White non-Hispanic mothers. These conditions were anemia, diabetes, and hypertension. Almost 5% of Hispanic mothers (range 2.2% to 5.3%) as compared to 1.3% of White non-Hispanic mothers had anemia reported. The percentage of Hispanic mothers reporting diabetes ranged from 2.4% to 4.4%, averaging 3.7%. “Other Hispanic” (5.7%)

⁴ Information on the mother’s language preference is collected from the mother at the time of birth, based on the birth certificate question, “In what language does the mother prefer to read or discuss health-related materials?”

and Cuban (5.6%) mothers had hypertension reported in a higher proportion than White non-Hispanic mothers (3.9%). Proportions of mothers reporting hypertension in the seven other Hispanic groups were comparable to that of White non-Hispanic mothers, ranging from 2.8% to 3.9%. “Other South American”, Colombian and Cuban mothers had higher percentages of delivery by Cesarean section than White non-Hispanic mothers did.

Prenatal Care

Sixty-six percent of all Hispanic mothers received adequate prenatal care⁵. This percentage ranged from 59% to 82% depending on the mother’s ethnicity. “Other Hispanic” and Cuban mothers had percentages comparable to White non-Hispanic mothers (83%). Salvadoran and Puerto Rican mothers had the lowest adequate prenatal care percentages, 59% and 64%, respectively. Hispanic mothers in some of the larger, urban communities such as Lawrence (51%), New Bedford (56%), Brockton (57%) and Springfield (58%) had lower percentages of adequate prenatal care than the statewide average for all Hispanic mothers (66%).

Source of payment for prenatal care varied substantially by mother’s ethnicity. Seventy-five percent of Puerto Rican and Dominican mothers and 71% of Salvadoran mothers had prenatal care paid with public funds, compared with only 28% of Cuban mothers, 38% of “Other South American” mothers, and 16% of White non-Hispanic mothers.

For most Hispanic groups, the majority of mothers received their prenatal care at physicians’ offices rather than at hospital clinics or community health centers. This was true for “Other South American” (61%), Cuban (60%), Mexican (54%), Colombian (46%), Puerto Rican (43%), “Other Hispanic” (40%), and Dominican mothers (33%). However, Salvadoran and “Other Central American” mothers were more likely to receive their prenatal care at a community health center (55% and 36%, respectively). The percentages of Hispanic mothers receiving prenatal care at physicians’ offices were lower than for White non-Hispanic mothers (83%).

Breastfeeding

Hispanic mothers reported higher percentages of breastfeeding⁶ (range of 73% to 87%) than White non-Hispanics (70%) with the exception of Puerto Rican mothers who had the lowest percentage (60%). Salvadoran and “Other South American” mothers had the highest percentage of breastfeeding⁶ (87%). Non-continental U.S.-born Hispanic mothers had higher percentages for breastfeeding⁶ (77% vs. 59%) than continental U.S.- born Hispanic mothers.

⁵ Adequacy of prenatal care is a quantitative measure based on the timing and total number of prenatal visits; it is not a measure of the quality of care. Refer to the Glossary for a complete explanation.

⁶ Mother was breastfeeding or was intending to breastfeed at the time the birth certificate was completed.

Low Birthweight

The incidence of low birthweight infants varied across Hispanic ethnicities. Hispanic mothers, with the exception of Colombians had higher percentages of low birthweight infants (weighing less than 5.5 pounds) than White non-Hispanic mothers in Massachusetts (6.1%). “Other Hispanic” mothers had the highest percentage of low birthweight infants (10.5%) when compared to all other Hispanic groups and to White non-Hispanics mothers. Hispanic mothers in Brockton (11.2%), Springfield (10.2%) and Framingham (9.8%) had the highest percentages of low birthweight infants among communities with the highest number of Hispanic births. Non-continental U.S.-born Hispanic mothers had lower percentages of low birthweight infants (7.6% vs. 8.9%) than continental U.S.-born Hispanic mothers.

Preterm Births

The percentages of preterm births (births before 37 weeks of gestation) also varied by ethnic group. Overall, with the exception of Mexican, Colombian and “Other South American” mothers, Hispanic mothers had a higher proportion of premature births than White non-Hispanic mothers (6.8%). Nine percent of Hispanic mothers delivered preterm infants. Percentages were highest for “Other Hispanic” mothers (11.5%). Among selected cities and towns with the highest number of Hispanic births, Hispanic mothers in Springfield (12.1%), Chicopee (12.1%) and Leominster (9.8) had the highest percentages of preterm births. Hispanic mothers born outside of the continental U.S. had a lower percentage of preterm births (8.4%) than Hispanic mothers born in the continental U.S.

SUMMARY OF VARIATION IN MATERNAL CHARACTERISTICS AND INFANT OUTCOMES

Smoking, low educational attainment, not being married, teen births and high parity (having more than 3 live births), are considered potential risk factors for adverse birth outcomes. Also, women born in other countries may have different health practices than women born in the continental United States. Language and cultural barriers may also influence participation in the American health care system. In some but not all respects, Hispanic mothers appear to have a higher risk profile than their White non-Hispanic counterparts. Overall, compared to White non-Hispanic, Hispanic mothers have:

- higher % teen mothers (21% vs. 5%)
- higher % of less than a High School education (32% vs. 4%)
- higher % unmarried mothers (61% vs. 18%)
- higher % high parity (having more than 3 live births) (12% vs. 6 %)
- lower % adequate prenatal care (66% vs. 84%)
- higher % preterm births (9.0% vs. 6.8%) and LBW infants (8.0% vs. 6.1%)
- higher % abnormal conditions (19% vs. 12%)

In particular, Salvadoran and Puerto Rican mothers were more likely to have specific characteristics that may be associated with adverse birth outcomes (Table A).

Puerto Rican mothers had the highest risk profile among Hispanic ethnicity groups in 1996-1999:

- highest % teen mothers (29%)
- highest % smoking during pregnancy (14%)
- highest % unmarried mothers (72%)
- highest % high parity (having more than 3 births) (14%)

Salvadoran mothers also had a relatively high-risk profile among Hispanic ethnicity groups in 1996-1999:

- highest % of less than High School education (62%)
- lowest % adequate prenatal care (59%)

In addition, Salvadoran mothers had the highest percentage of women born outside the Continental U.S. (98% were born outside the U.S.) and the highest percentage of women preferring to converse in Spanish rather than in English (82%).

Nevertheless, some important adverse birth outcomes for Salvadorans were better than for Puerto Rican or “Other Hispanics” mothers. Puerto Rican and “Other Hispanic” mothers had the poorest outcomes overall among Hispanic groups.

- highest % abnormal conditions
- highest % low birthweight and preterm births
- highest % not breastfeeding

It is interesting to note that Hispanic mothers born in the Continental U.S. had a higher risk profile than Hispanics born outside the continental United States (Table B):

- twice as likely to be teen mothers (32% vs. 16%)
- more likely to be unmarried (71% vs. 56%)
- 3 times more likely to smoke during pregnancy (16% vs. 5%)
- much more likely to not breastfeed (41% vs. 24%)

Yet, Hispanic mothers born in the Continental U.S. were also:

- slightly more educated (27% less than high school vs. 34%)
- as likely to receive adequate prenatal care (67% vs. 66%)
- as likely to have higher parity (11% vs. 12%)

**Table A. Summary Table of Maternal Characteristics and Infant Outcomes for Selected Hispanic Groups:
Massachusetts 1996-1999**

	Puerto Rican	Dominican	Salvadoran	Other Hispanic ⁶	All Hispanics
Number of births	17,336	5,751	2,329	1,347	33,437
Maternal Characteristics (%)					
Teen births (age < 20 yrs)	29%	15%	12%	21%	21%
Unmarried	72%	59%	57%	57%	61%
Less than high school education	33%	26%	62%	22%	32%
Smoked during pregnancy	14%	3%	1%	7%	9%
Not breastfeeding ¹	41%	18%	13%	27%	29%
Adequate prenatal care ²	64%	67%	59%	82%	66%
Parity ³ > 3	14%	9%	13%	9%	12%
Preferred languages other than English	30%	67%	83%	45%	46%
Infant Outcomes (%)					
Preterm ⁴	10%	8%	7%	12%	9%
Low birthweight ⁵	9%	7%	7%	11%	8%
Abnormal conditions ⁷	23%	19%	12%	20%	19%

Note: Percentages based on known values.

¹ Mother was breastfeeding or was intending to breastfeed at the time the birth certificate was completed.

² Adequate prenatal care: See technical notes for definition of adequacy of care.

³ The number of live births, including the present birth.

⁴ Preterm is defined as gestational age less than 37 weeks.

⁵ Low birthweight is defined as less than 2,500 grams (5.5 lbs).

⁶ Refers to original ethnicity group from birth certificate

⁷ Mention of any abnormal condition of newborn, such as acidosis, anemia, congenital infection, intracranial hemorrhage, etc. See glossary for a full definition of abnormal conditions.

**Table B. Summary Table of Maternal Characteristics and Infant Outcomes for Selected Hispanic Groups by Birthplace:
Massachusetts 1996-1999**

	Puerto Rican		Dominican		Salvadoran		Other Hispanic ⁶		All Hispanics	
	Continental US-born	Non Continental US-born	Continental US-born	Non Continental US-born	Continental US-born	Non Continental US-born	Continental US-born	Non Continental US-born	Continental US-born	Non Continental US-born
Number of births	8,307	9,026	678	5,068	48	2,276	940	405	11,017	22,379
Maternal Characteristics (%)										
Teen births (age < 20 yrs)	34%	25%	35%	12%	42%	11%	27%	9%	32%	16%
Unmarried	75%	68%	71%	57%	67%	57%	64%	39%	71%	56%
Less than high school education	32%	34%	17%	27%	18%	63%	20%	27%	27%	34%
Smoked during pregnancy	18%	11%	9%	2%	--	1%	9%	2%	16%	5%
Not breastfeeding ¹	45%	36%	27%	16%	--	13%	32%	15%	41%	23%
Adequate prenatal care ²	64%	65%	63%	67%	62%	59%	85%	74%	67%	66%
Parity ³ > 3	12%	16%	7%	10%	--	13%	9%	11%	11%	12%
Preferred languages other than English	12%	46%	19%	74%	15%	84%	38%	61%	14%	61%
Infant Outcomes (%)										
Preterm ⁴	10%	10%	8%	8%	--	7%	12%	11%	10%	8%
Low birthweight ⁵	9%	9%	7%	7%	10%	7%	11%	9%	9%	8%
Abnormal conditions ⁷	23%	23%	15%	19%	13%	12%	23%	13%	22%	18%

Note: Percentages based on known values.

Continental U.S.-Born includes women born in the 50 States and the District of Columbia.

Non-Continental U.S.-Born includes women born in Puerto Rico, the Virgin Islands, Guam and all other countries.

¹ Mother was breastfeeding or was intending to breastfeed at the time the birth certificate was completed.

² Adequate prenatal care: See technical notes for definition of adequacy of care.

³ The number of live births, including the present birth.

⁴ Preterm is defined as gestational age less than 37 weeks.

⁵ Low birthweight is defined as less than 2,500 grams (5.5 lbs).

⁶ Refers to original ethnicity group from birth certificate.

⁷ Mention of any abnormal condition of newborn, such as acidosis, anemia, congenital infection, intracranial hemorrhage, etc. See glossary for a full definition of abnormal conditions.

Chapter 1

Demographic Profile of Hispanics in Massachusetts: 1980-2000

Foreword

In actuality, there is no one Hispanic community-there are many diverse ethnic and cultural groups originating from Central, South America or other Spanish-speaking nations, even within the same country. The term “Hispanic” glosses over intercultural distinctions by grouping all Spanish-speaking people together into one undifferentiated community¹. Each of these subgroups has its own distinctive culture and history. Although Hispanic ethnicity groups share common cultural origins and language, they come from diverse nations and backgrounds with distinctive histories and distinctive socio-economic and political experiences. Not surprisingly, the use of health outcomes measures that group all Hispanics together hides the considerable heterogeneity that exists within that population.

The focus of this report is to present detailed birth data for Massachusetts residents of Hispanic ancestry. The goal of ***Hispanic Births in Massachusetts: 1996-1999*** is to provide information regarding the similarities and differences in birth-related characteristics of these communities in order to understand more fully the specific needs of the individual Hispanic populations in Massachusetts, and to improve the ability of the Department of Public Health to target culturally appropriate services.

Having these data better equip public health professionals to provide health services to the relevant communities and to more efficiently use resources in working towards the ultimate goal of reducing health disparities.

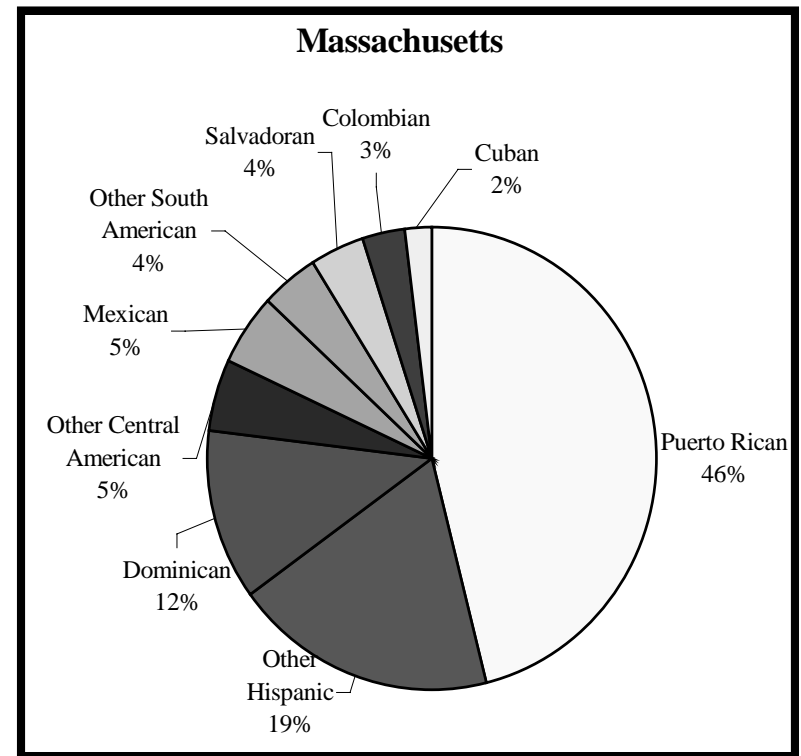
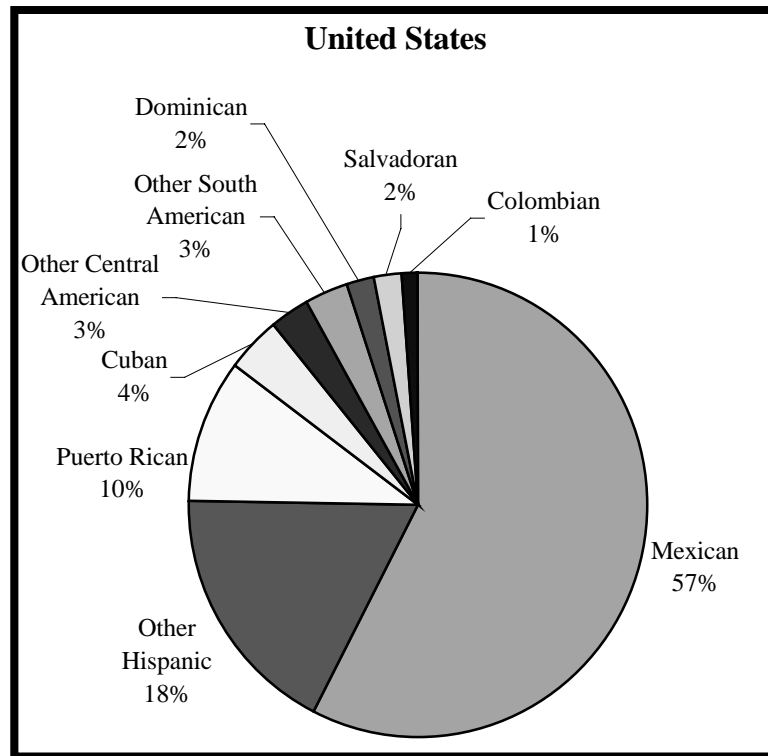
¹ Shorris, E. (1992) *Latinos*. New York: Norton.

How many Hispanics currently live in Massachusetts?

According to 2000 U.S. Census data, 428,729 persons of Hispanic ethnicity reside in the Commonwealth of Massachusetts, accounting for 6.8% of the total Massachusetts population. The Puerto Rican community is the largest Hispanic population with 199,207; followed by Other Hispanic 82,101; Dominicans 49,913; Other Central American 22,417; Mexicans 22,288; Salvadorans 15,900; Other South Americans 15,248; Colombians 12,788; and Cubans 8,867.

In the U.S., 12.5% of the population is of Hispanic ethnicity. The composition of the Hispanic population in Massachusetts differs from the pattern throughout the United States. In the United States as a whole, a greater percentage of the Hispanic population is of Mexican ethnicity (58%), followed by Other Hispanic (18%), Puerto Rican (10%) and then by Cuban (4%). In contrast, Puerto Ricans are the largest group of Hispanics in Massachusetts (46%), followed by Other Hispanic (19%), Dominicans (12%), Mexican (5%) and then by Cuban (2%) (Figure 1.1).

Figure 1.1 Distribution of Hispanic Population
Massachusetts and U.S.: 2000



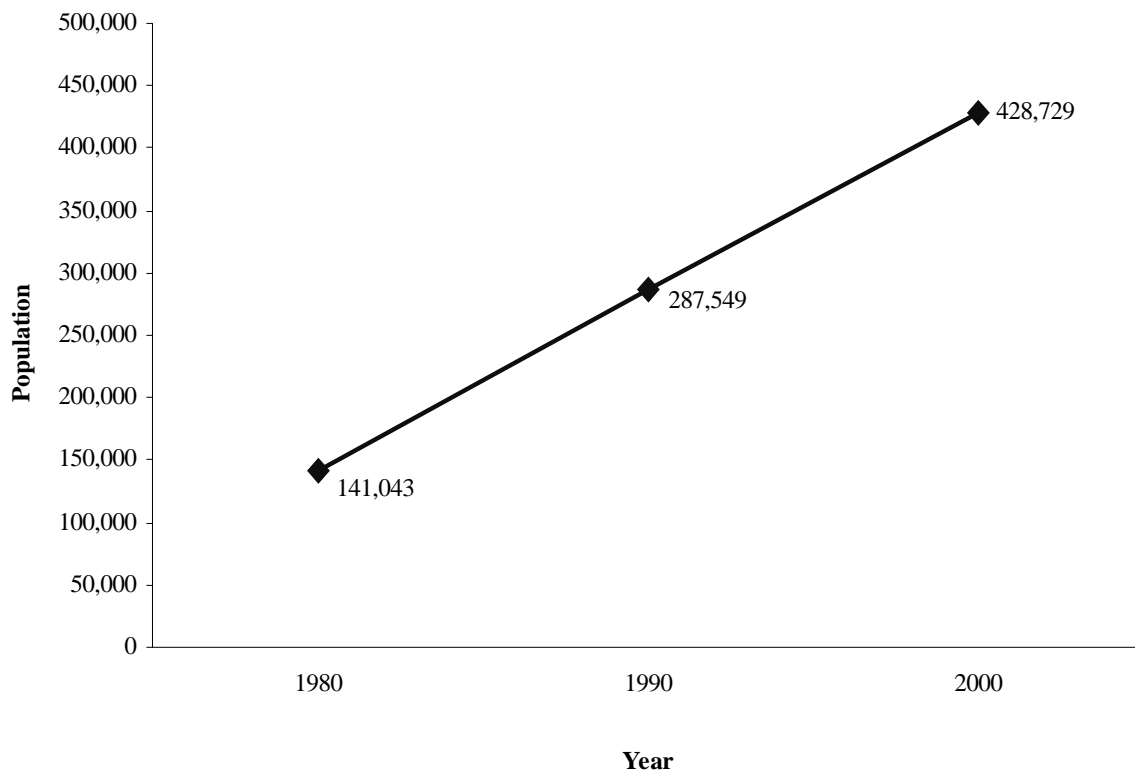
Source: US Census Bureau: Census 2000, Summary File 1; The Hispanic Population Census 2000 Brief.

How has the Hispanic population changed from 1980 to 2000?

The total Hispanic population in Massachusetts doubled from 1980 to 1990, from 141,043 to 287,549. Between 1990 and 2000, the Hispanic population increased by 49%, reaching 428,729 residents (Figure 1.2a).

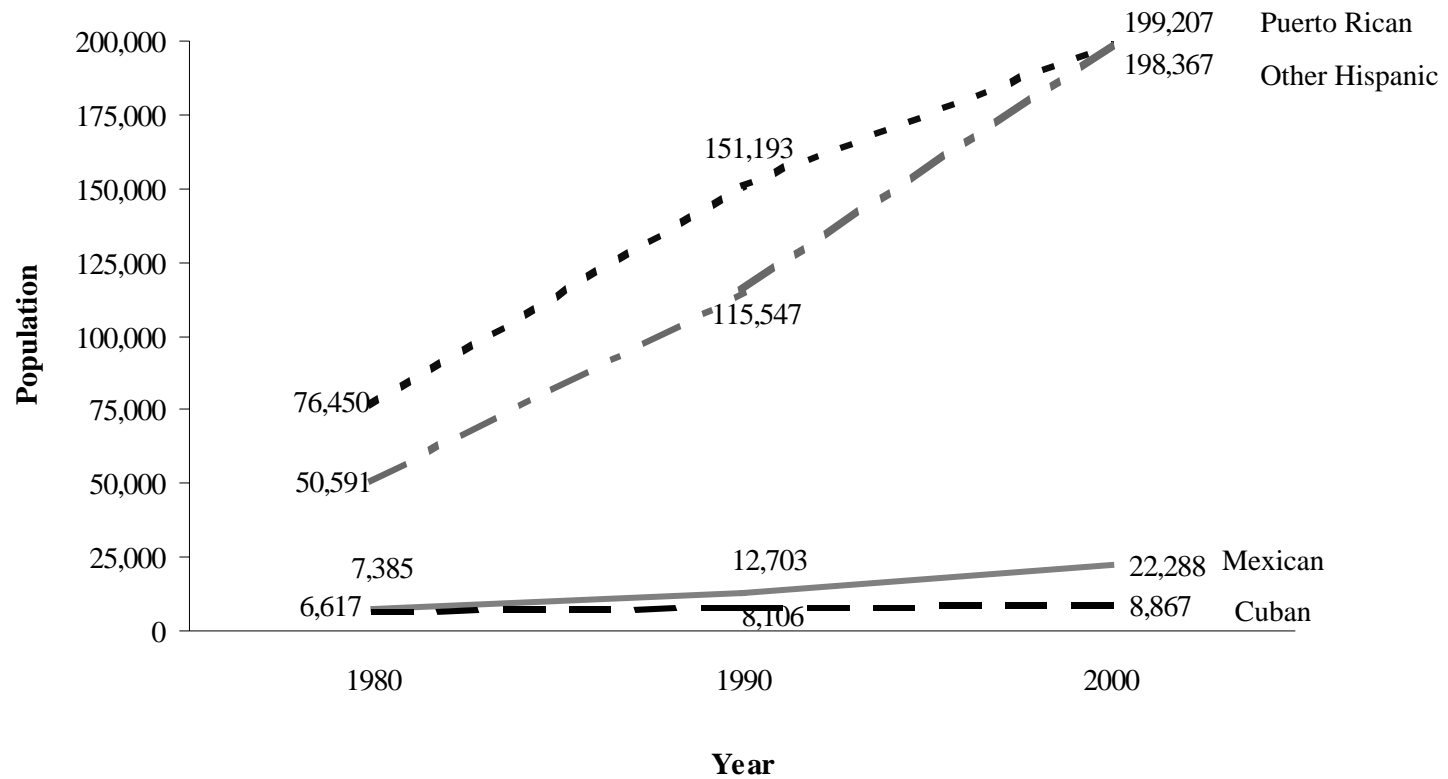
According to the U.S. Census, Hispanics include Puerto Ricans, Dominicans, Mexicans, Cubans and other Hispanics such as Salvadorans and Colombians. The Massachusetts population growth data for several of these Hispanic groups are shown in Figure 1.2b. Whereas the largest proportional population increase from 1980 to 1990 occurred among Puerto Ricans (98%), the largest proportional population increase from 1990 to 2000 occurred among Mexicans (76%).

Figure 1.2a Growth in the Hispanic Population
Massachusetts: 1980-2000



Source: US Census Bureau: Census 2000
1980 STF 1
1990 STF1
2000 SF1, Demographic Profile

Figure 1.2b Trends in Hispanic Populations
Massachusetts: 1980-2000



Source: US Census Bureau

What was the level of growth in the Hispanic population between 1980 and 2000?

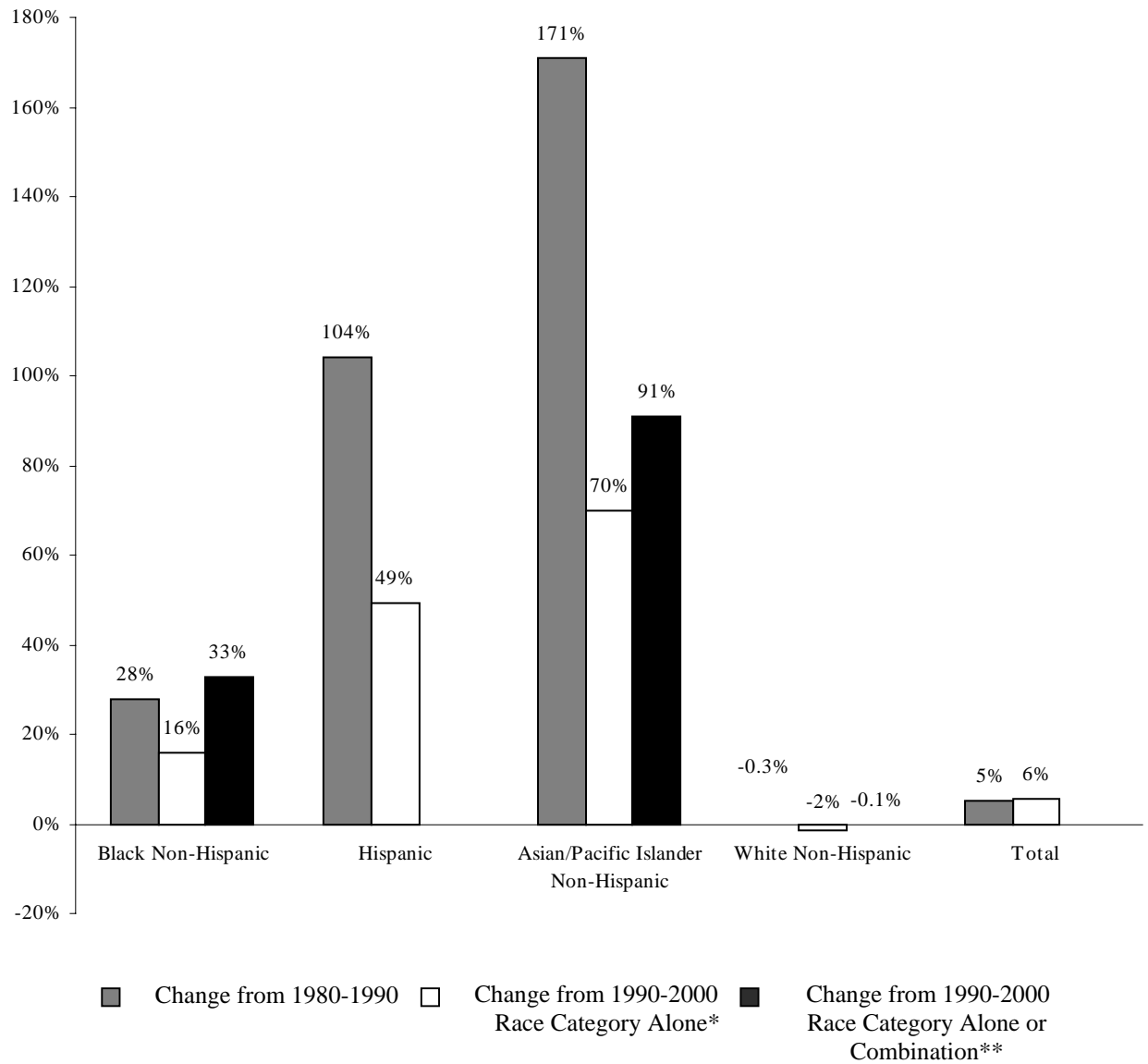
The Hispanic population is the second fastest growing population group in Massachusetts, behind Asians/Pacific Islanders. From 1980 to 1990, overall population growth in Massachusetts was 5%, but the Hispanic community grew 104%. In comparison, the Asian/Pacific Islander population grew 171% during the 1980's, and the Black non-Hispanic population grew 28% (Figure 1.3).

As a result of new Federal guidelines, there were several changes to the Census 2000 questionnaire. In the Census 2000, the question on whether a person is Hispanic or Latino was asked before the question about race, and respondents could also choose more than one race to identify themselves. Allowing people to report more than one race adds to our knowledge about racial diversity of the United States. Yet, this also means that Census 2000 race data are not directly comparable with data from 1990 and previous censuses.

From 1990 to 2000, the total population grew by 6% in Massachusetts. As in the previous decade, the second largest increases were observed among Hispanics with a 49% growth rate. Asian/Pacific Islanders experienced the largest increase with a 70% growth rate for Asian/Pacific Islanders alone and 91% for those who selected that race alone and those who marked that race and at least one other race. As a comparison, Black non-Hispanics experienced a 16% increase for those who selected that race alone and a 33% increase for those who selected that race and at least one other race. White non-Hispanics were the only group to experience a decrease in population.

Figure 1.3 Percentage Population Change by Race and Hispanic Ethnicity

Massachusetts: 1980-1990 and 1990-2000



Source: US Census Bureau

* Includes people who selected this race alone.

** Includes people who selected that race and at least one other race listed.

Where do Hispanics primarily reside?

Boston had the largest Hispanic population in Massachusetts in 2000, 85,089, followed by Lawrence, Springfield, Worcester, and Chelsea. In 2000, there were thirty-one communities in Massachusetts with 2,000 or more Hispanic residents (Table A1.1). Among these communities, Lawrence had the largest concentration of Hispanics: 60% of all Lawrence residents were Hispanic. Fourteen Massachusetts communities had Hispanic populations totaling greater than 10% of their population: Chelsea, 48%; Holyoke, 41%; Springfield, 27%; Southbridge, 20%; Lynn, 18%; Worcester, 15%, Fitchburg, 15%; Boston, 14%; Lowell, 14%; Salem, 11%; Leominster, 11%; Framingham, 11%; and New Bedford, 11% (Table A1.1.c).

The distribution of Hispanic ethnic groups varied from community to community in Massachusetts (Table A1.1.b). While 47% of the Hispanic population in Massachusetts is Puerto Rican, many communities have higher proportions of Puerto Ricans among Hispanic residents.

Towns with the largest percentage of Puerto Ricans among their Hispanic residents are Holyoke (88%), Southbridge (87%), and Springfield (85%). Towns with the highest percentage of Salvadorans among their Hispanic residents are Somerville (31%), and Everett (25%). Towns with the largest percentage of Dominicans among their Hispanic residents are Salen (48%), Lawrence (38%), and Lynn (34%). Towns with the largest percentage of “Other Hispanics” among their Hispanic residents are Malden (36%), Revere (31%), and Everett (30%). Towns with the largest percentage of Mexicans among their Hispanic residents are Brookline (18%), Marlboro (17%), and Cambridge (16%). Towns with the largest percentage of Cubans among their Hispanic residents are Newton (8%), Brookline (6%), and Amherst (4%) (Table A1.1.b).

From 1990 to 2000, the growth in the Massachusetts Hispanic population varied substantially from community to community (Table A1.2). While overall population growth had been low in many communities, the growth of the Hispanic population was dramatic. For instance, in Chicopee, the overall population decreased by 4%, but the Hispanic population grew by more than 133%. In Fall River, there was a decrease in the overall population of less than 1% for the years 1990-2000, but the total Hispanic population grew by 93%.

Towns that experienced the greatest growth in Hispanic population between 1990 and 2000 were Revere (174%), Everett (164%), Chicopee (134%), Lynn (120%) and Methuen (104%).

Trends for specific Hispanic groups between the years of 1990 and 2000 are shown in Table A1.3. In all but one of the 31 towns with Hispanic populations of greater than 2,000, the Hispanic population has increased. The Hispanic population of Taunton decreased by 7% between 1990-2000. However, the Cuban and Puerto Rican population in Taunton increased by 114% and 15% respectively.

What is the age distribution of Hispanics in Massachusetts?

In 2000, the Hispanic population in Massachusetts was younger than the total state population. Approximately 70% of the Hispanic population was younger than age 35, while only 47% of the state population as a whole was less than 35 years of age. Median age for Hispanics was 24.5 years compared to 36.5 years for the state as a whole. In 1990, about 74% of the Hispanic population was younger than age 35 compared to 53% for the state as a whole (Table A1.4).

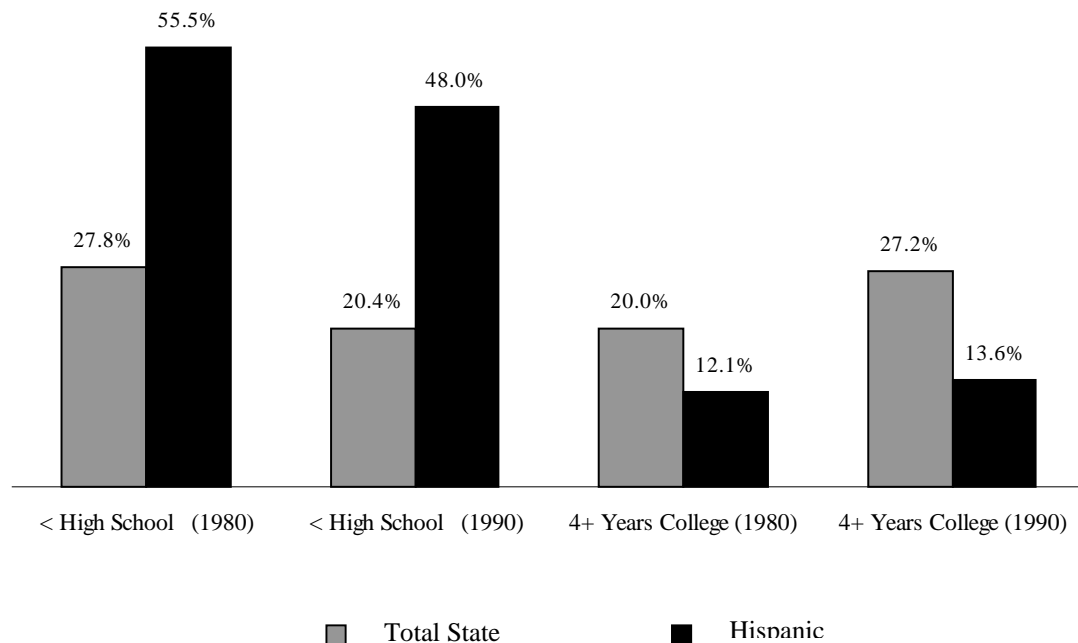
Among Hispanics in 1990², the Puerto Ricans were particularly young, with 48% less than age 20, while 42% of the total Hispanic population was below the age of 20. Slightly less than 25% of the Cuban population was less than 20 years old, similar to the statewide proportion in 1990 of about 26%.

² Age data by Hispanic ethnicity groups for the 2000 Census were not available when this report was released.

How does the education level of the Hispanic population in Massachusetts in 1990 compare with that of the state as a whole?³

Patterns of educational attainment differ for Hispanics compared with the Massachusetts population as a whole. In Massachusetts in 1980, slightly more than half of the Hispanic population 25 years and older had not graduated from high school compared to about 28% of the state population. Approximately 12% of Hispanics attended at least four years of college compared to 20% of the state population. By 1990, almost 14% of the Hispanics in Massachusetts attended at least four years of college compared to 27% of the state population (Figure 1.4).

**Figure 1.4 Educational Attainment of Hispanics,
Ages 25 Years and Above**
Massachusetts: 1980 and 1990



Source: U.S. Bureau of the Census, 1990 STF3 Sample Data

³ Education and socioeconomic data for the 2000 Census were not available when this report was released.

How does the socioeconomic level of Hispanics in Massachusetts in 1980 and 1990 compare with the statewide level?³

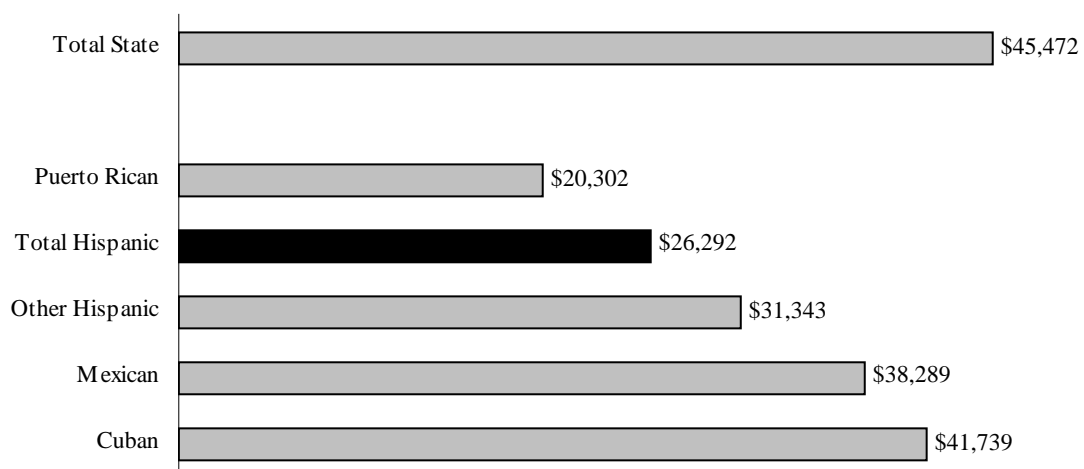
The average household income for Hispanics in 1980 was lower than for the state overall. A much higher proportion of Hispanics also lived below the poverty level as compared to Massachusetts as a whole. Between 1980 and 1990, the average annual Hispanic income rose 100%, as compared to a growth rate of 119% for the state as a whole. Despite these gains, by 1990, the average annual household income for Hispanics was still only slightly more than half the income of the state as a whole. Patterns of poverty in the Hispanic community persisted in 1990. A decrease in the percent of persons below poverty from 37.6% to 36.7% was comparable to a total state decrease in persons below poverty from 9.6% to 8.9% (Table A1.5).

In 1980, the mean household income of the Hispanic population was \$13,136, 37% below the total state mean household income of \$20,744. The Hispanic mean household income (\$26,292) was 42% below the state mean household income (\$45,472) in 1990. Also, Hispanics were more likely to be unemployed (15%) in 1990 than was the state population as a whole (7%).

Clearly, wide variation in economic status exists within the Hispanic community. According to 1980 and 1990 U.S Census data, Cubans had the highest mean household income among Hispanics in both 1979 and 1989, while Puerto Ricans had the lowest mean household income. The average Puerto Rican household income in 1979 (\$9,647) was 53% below the average state household income of \$20,744, and in 1989 (\$20,302) was 55% below the average state household income of \$45,472 (Figure 1.5).

Figure 1.5 Mean Household Income of Hispanics

Massachusetts: 1989



Source: U.S. Bureau of the Census, 1990 STF3 Sample Data

Summary

In summary, Hispanics are the largest minority population in Massachusetts. This population has experienced substantial growth in the last decade and it is expected to continue to grow in the next years. Between 1990 and 2000, the Hispanic population in Massachusetts grew by 49% as compared to an increase of 6% for the state as a whole. A 76% increase in the number of Mexicans and a 72% increase in the number of “Other Hispanics” fueled much of the nearly 142,000 increase in the number of Hispanics between 1990 and 2000. Based on 2000 U.S. Census data, 31 Massachusetts cities have a Hispanic population greater than 2,000 persons, accounting for 85% of all Hispanics in the state.

Based on 2000 U.S. Census data, the Hispanic population is younger than the state as a whole. Also, based on 1990 U.S. Census data, the proportion of Hispanics obtaining a college degree is much less than the state as a whole, and the proportion of Hispanics with low educational attainment is above the state average.

Income and poverty data also indicate disparities between the Hispanic population and the state as a whole. Hispanics in 1980 had a lower average annual household income, and a higher percentage of people living below the poverty level than were reported for the statewide population. In 1990, the average household income for Hispanics remained lower than the statewide level, and the poverty rate decreased 2% for Hispanics compared to a decrease of 7% statewide. The proportion of Hispanic residents living below poverty was four times that for the state as a whole.

Chapter 2

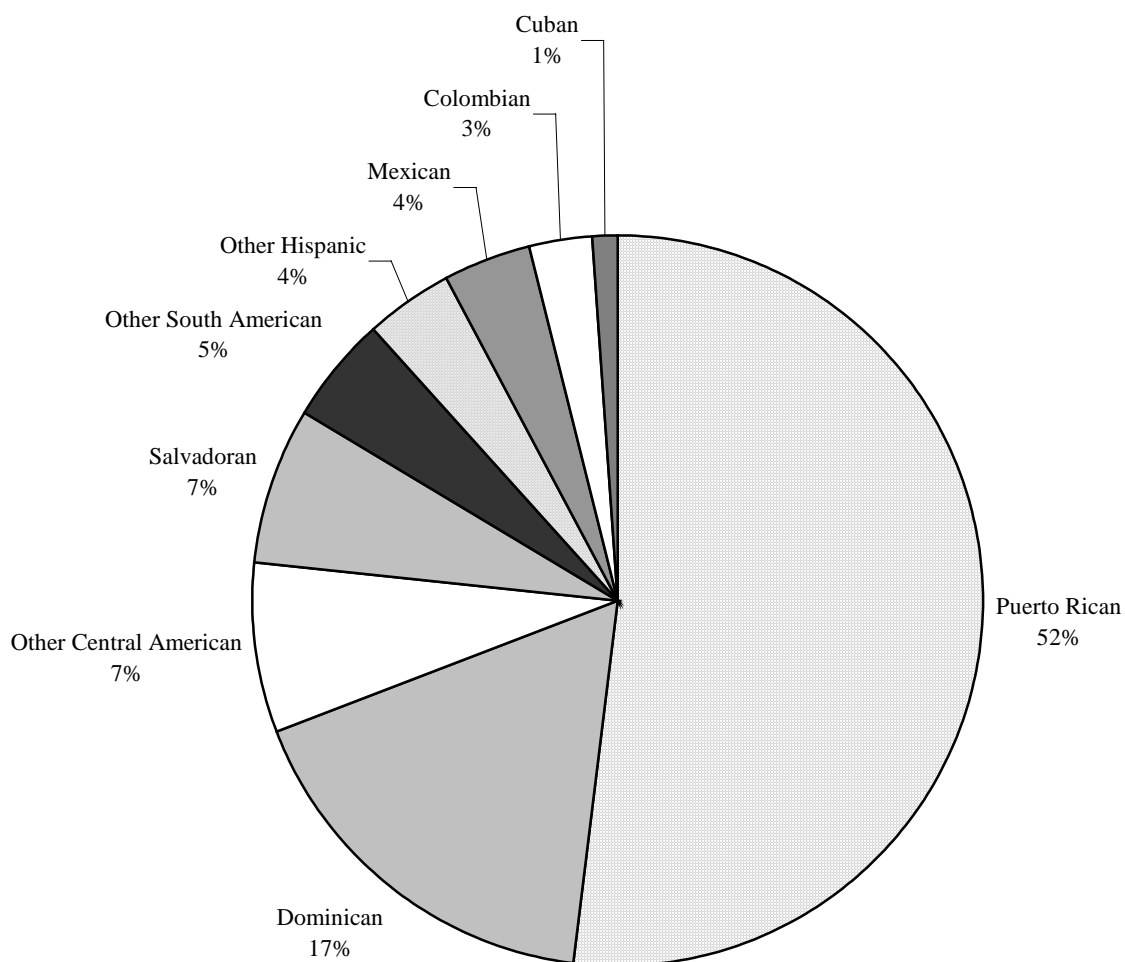
Recent Trends in Hispanic Births in Massachusetts: 1996-1999

From 1996 through 1999, how were births among Hispanic women in Massachusetts distributed by ethnicity?

The distribution of Hispanic births by ethnicity was as follows: Puerto Rican (52%), Dominican (17%), Salvadoran (7%), “Other Central American” (7%), “Other South American” (5%), Mexican (4%), Colombian (3%), Cuban (1%), and “Other Hispanic” (4%).

Figure 2.1 Percentage of Hispanic Births by Ethnicity

Massachusetts: 1996-99



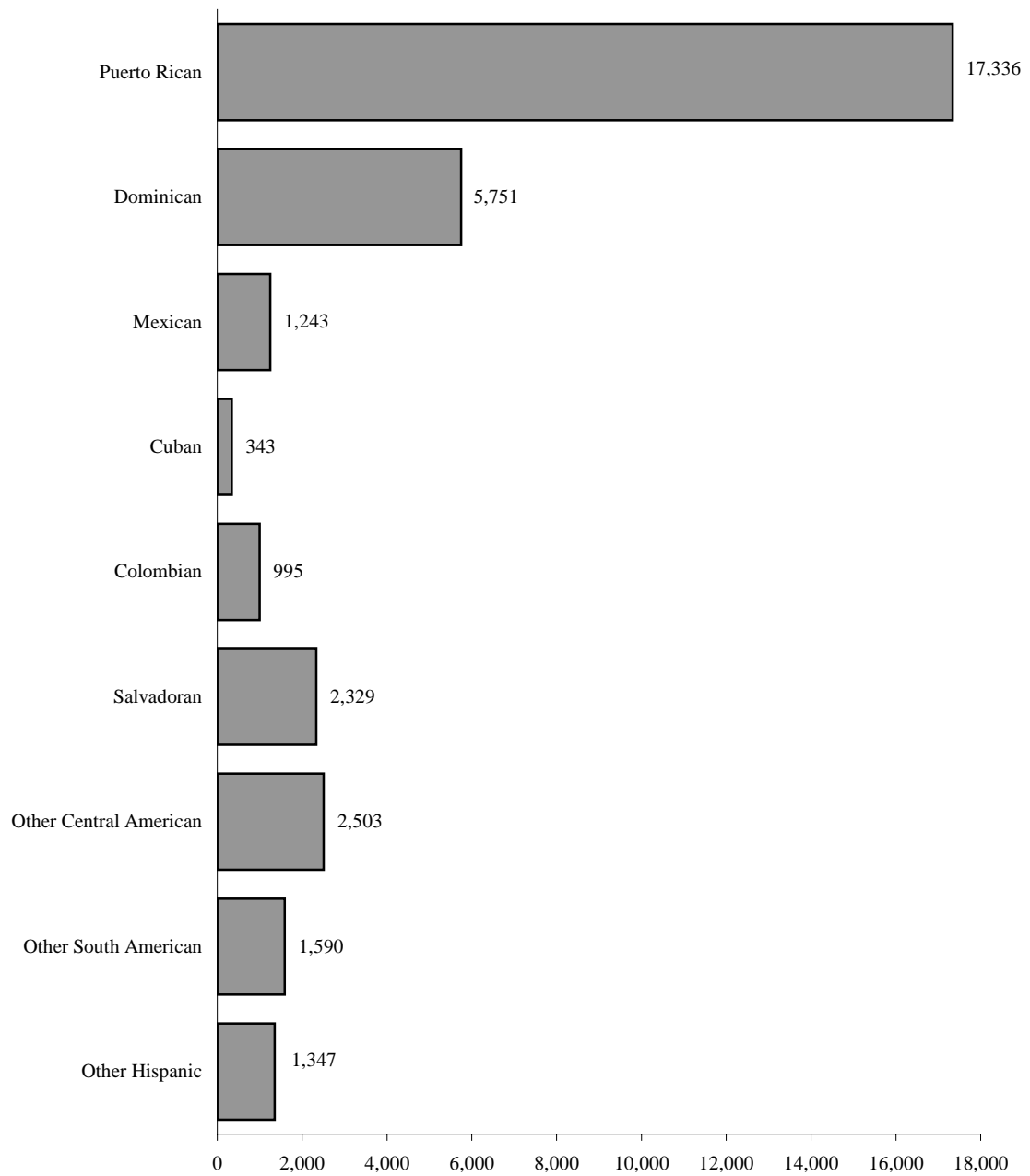
Source: Massachusetts Department of Public Health, Bureau of Health Statistics, Research, and Evaluation (BHSR&E) (See Appendix Table A2.1)

From 1996 through 1999, how many Hispanic births were there in Massachusetts?

From 1996 through 1999, there were 17,336 births among Puerto Rican women who were residents of Massachusetts. Dominican women accounted for 5,751 births during this same time period, while Salvadoran women gave birth to 2,329 children. Women classified as “Other South American” and “Other Central American” gave birth to 1,590 and 2,503 children, respectively. Lower numbers of births were recorded for Colombians (995), Mexicans (1,243), Cubans (343), and women classified as “Other Hispanic” (1,347) (Figure 2.2).

Hispanic mothers who selected one of the 3 ‘other’ Hispanic categories were born in many countries throughout the world, including the continental U.S. (24%), Puerto Rico & U.S. Territories, Mexico, 12 South American countries, 7 Central American countries, 7 Caribbean countries and 26 other countries scattered throughout Europe, Asia and Africa (Table A2.3). When we examined the data by mother’s birthplace, it became evident that there are a substantial number of births in Massachusetts to women born in Guatemala (1,272) and Honduras (555) among “Other Central American” mothers. Furthermore, the number of births in Massachusetts to women born in Brazil (320) and Peru (240) are the highest among South American mothers. Among “Other Hispanic” mothers, there was a substantial number of births in Massachusetts to women born in the continental U.S. (940).

Figure 2.2 Number of Hispanic Births by Ethnicity
Massachusetts: 1996-99



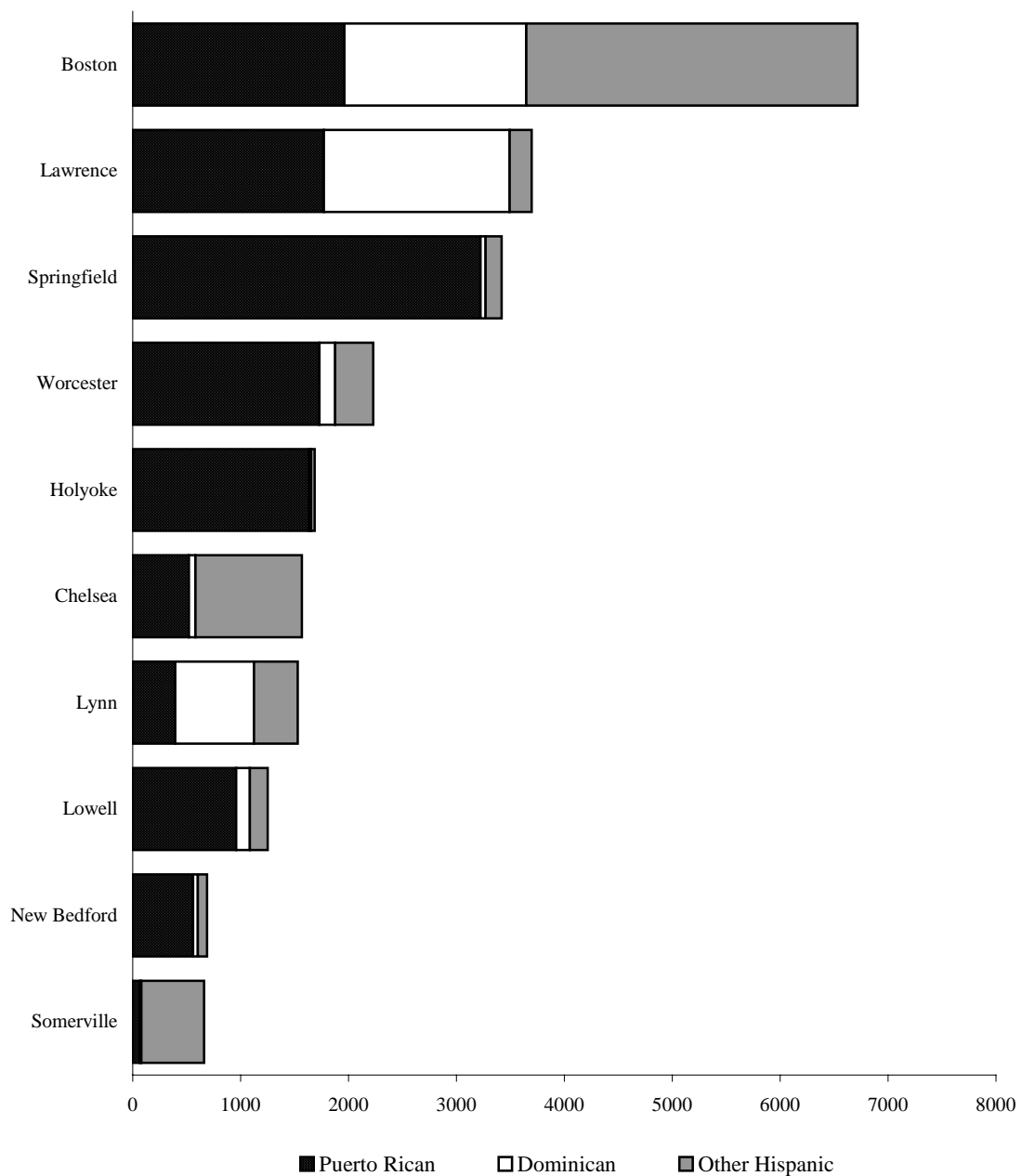
Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A2.1)

In Massachusetts, where did Hispanic mothers live?

Among Puerto Ricans, the largest number of mothers resided in Springfield (3,223) followed by Boston (1,926), Lawrence (1,772), Worcester (1,731), and Holyoke (1,631). Dominican mothers lived mainly in Lawrence (1,719), Boston (1,686) and Lynn (728). Salvadoran mothers tended to be concentrated in Boston (841), Somerville (389), and Chelsea (362). The highest number of Mexican (214), Cuban (71), and Colombian (286) mothers resided in Boston. Women who were classified as “Other Hispanic” (727) or “Other South American” (286) also tended to be concentrated in Boston. The largest number of mothers classified as “Other Central American” resided in Boston (644), Chelsea (384), Lynn (243), and Waltham (162) (Figure 2.3).

Figure 2.3 Number of Hispanic Births in Selected Communities

Massachusetts: 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A2.1)

Note: Ten cities and towns with the largest numbers of Hispanic births from 1996-1999.

Comparing 1986-1987 with 1996-1999, what were the trends in the number of births among Hispanic women in Massachusetts?

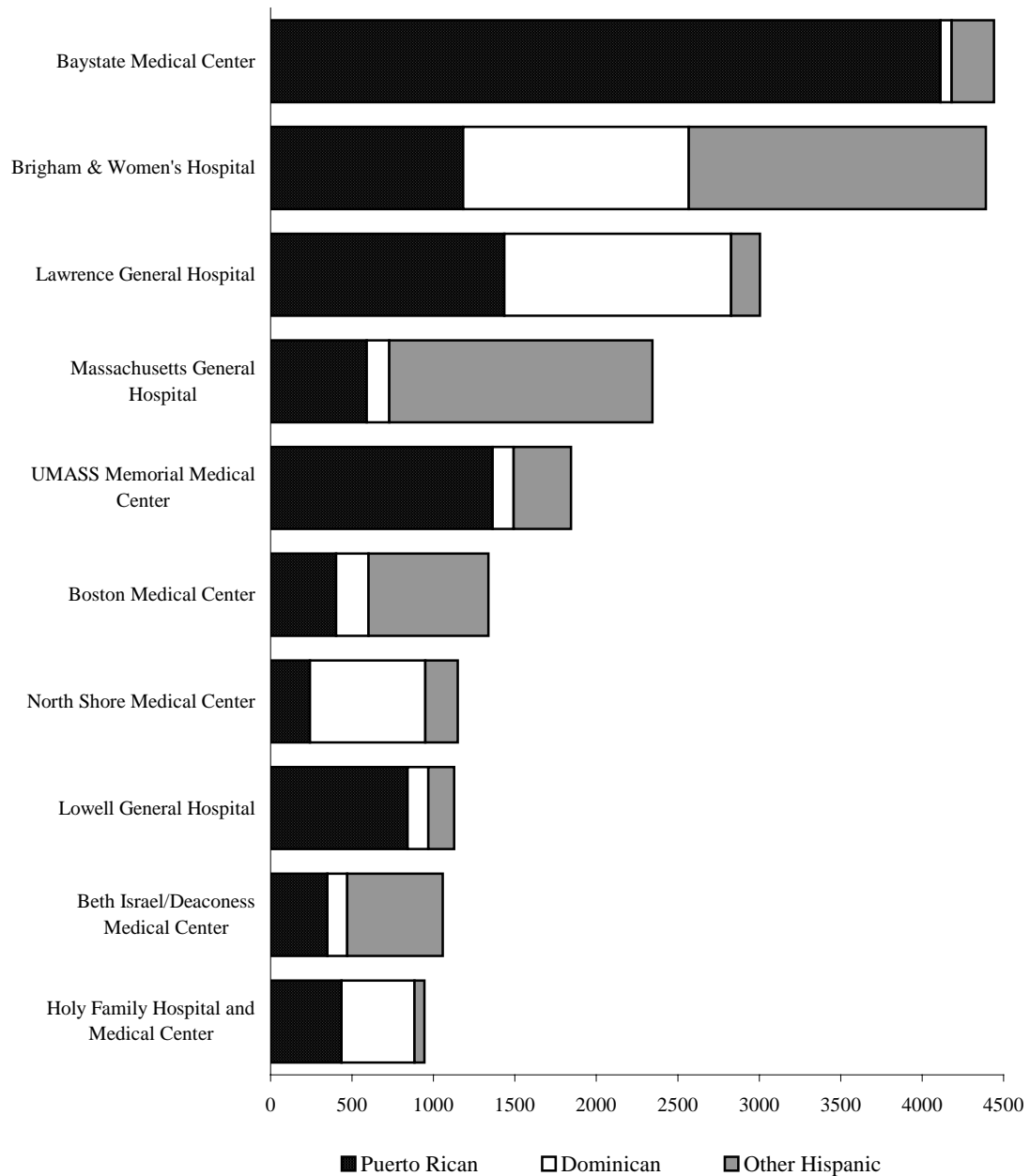
Data are available to compare changes in the number of recorded births between two time periods (1986-1987, and 1996-1999) for several of the ethnic groups included in this report. Between these two time periods, the average annual number of births among Puerto Rican women increased 28%, from 3,399 to 4,334. The average annual number of Dominican births increased by 111% between the two time periods - from 681 per year in 1986-1987 to 1,438 per year in 1996-1999. The number of Mexican births increased by 153%, while the number of Cuban births decreased by 20%. The number of births occurring among all other mothers identified as Hispanic increased by 54% between the two time periods.

From 1996 through 1999, in which hospitals did Hispanic mothers deliver their infants?

From 1996 through 1999, Baystate Medical Center (4,441), Brigham and Women's Hospital (4,391), Lawrence General Hospital (3,005), Massachusetts General Hospital (2,344), and UMASS Memorial Medical Center (1,845) delivered almost half (48%) of infants born to Hispanic mothers. Other hospitals delivering over 1,000 Hispanic births were Boston Medical (1,337), North Shore (1,149), Lowell General (1,126), and Beth Israel Deaconess (1,057). Ninety-three percent of Hispanic births at the Baystate Medical Center were among Puerto Rican women (4,112). Large numbers of Puerto Rican women also gave birth at Lawrence General (1,435), UMASS Memorial (1,363), and Brigham and Women's (1,183). Dominican births were concentrated at Brigham and Women's Hospital (31%) while Salvadoran births were concentrated at Massachusetts General (27%), and Cambridge Hospital (65%) (Figure 2.4).

Figure 2.4 Number of Hispanic Births at Selected Hospitals*

Massachusetts: 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A2.2)

* Ten hospitals with the largest numbers of Hispanic births from 1996-1999.

Note: Other Hispanic includes: Mexican, Cuban, Colombian, Salvadoran, Other Central American, Other South American, and Other Hispanic.

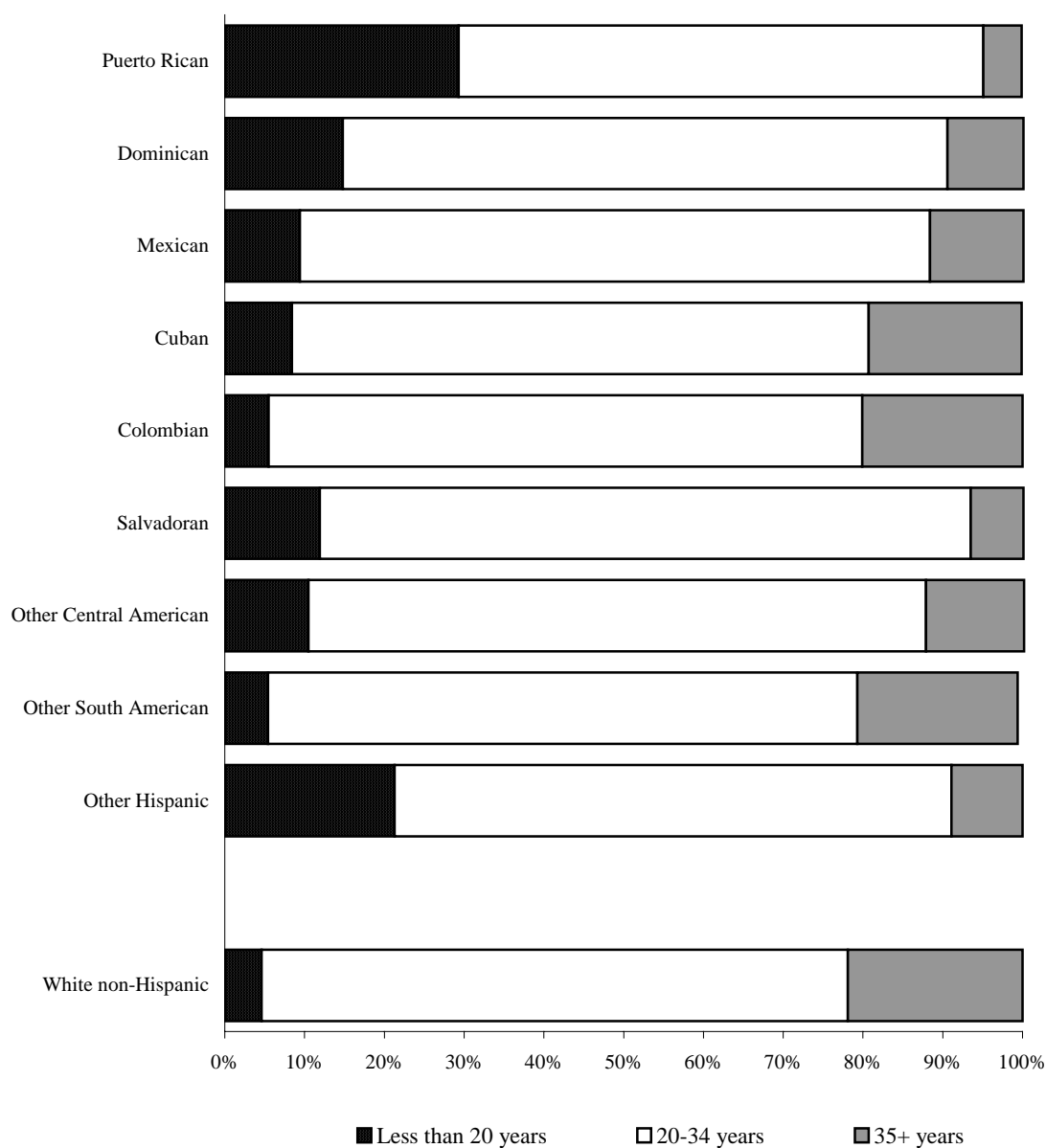
Chapter 3

Demographic Characteristics of Hispanic Mothers: 1996-1999

How old were Hispanic mothers?

Puerto Rican mothers were on average younger than other Hispanic women or White non-Hispanic mothers. The percent of Puerto Rican mothers who were under 20 years of age at the time they delivered their children was 29% compared with 5% among White non-Hispanic mothers. Among other Hispanic groups, the percent of mothers who were less than age 20 ranged from 6% for Colombian women to 21% among mothers classified as “Other Hispanic” (Figure 3.1).

Figure 3.1 Age Distribution of Hispanic and White non-Hispanic Mothers by Ethnicity
Massachusetts 1996-99



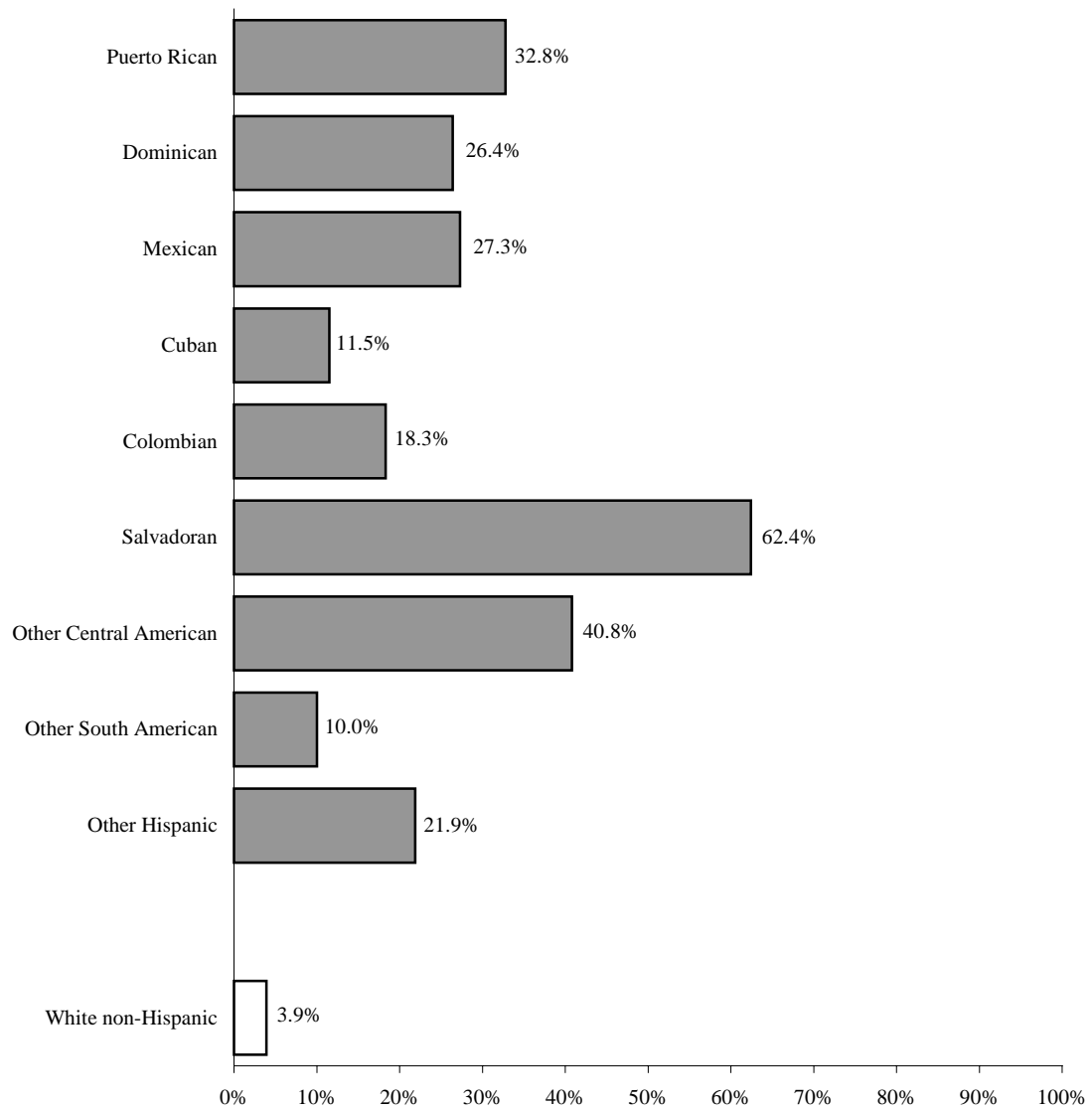
Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A3.1)

Were there differences in educational attainment among Hispanic mothers?

Salvadorans and mothers of “Other Central American” descent showed the lowest levels of educational attainment among Hispanic women. Approximately 62% of Salvadoran mothers and 41% of Other Central American mothers reported having completed less than 12 years of education compared to 4% among White non-Hispanic mothers. Among other Hispanic groups, the percent of mothers with less than a grade 12 education ranged from 10% for women classified as “Other South American” to 33% among Puerto Rican mothers (Figure 3.2). Variation in the level of educational attainment by ethnicity may be related to differences in the opportunity for schooling among different population groups as well as diversity in cultural norms regarding the education of women. The circumstances surrounding the immigration of various ethnic groups to the United States is also probably related to the disparities noted for Hispanic mothers. Only mothers who were 20 years or older were included in the examination of educational differences.

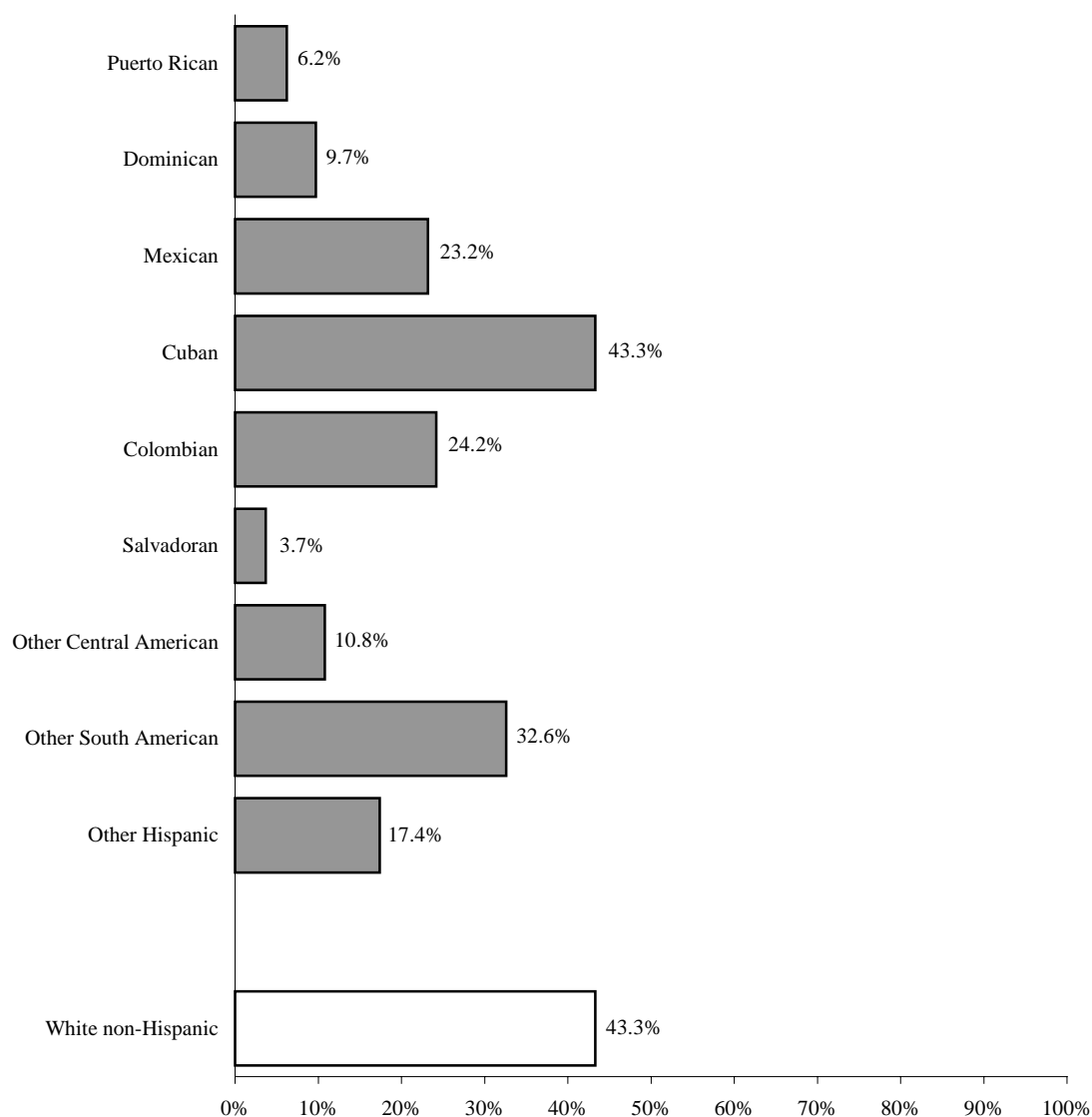
Figure 3.2 Percentage of Hispanic and White non-Hispanic Mothers with Less than a 12th Grade Education by Ethnicity, Ages 20 Years and Above

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A3.1)

**Figure 3.3 Percentage of College Graduates* Among
Hispanic and White non-Hispanic Mothers by
Ethnicity, Ages 20 Years and Above**
Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A3.1)

* Mother completed 4 years of college and/or obtained a bachelor's degree, based on information from birth certificate.

From 1996 through 1999, what proportion of Hispanic mothers were not married? How does the marital status distribution among Hispanic women compare with data for White non-Hispanic mothers?

A high percentage (72%) of Puerto Rican mothers were unmarried when they delivered their infants, in contrast with 18% among White non-Hispanic mothers. Among the other Hispanic ethnic groups, the percentage of mothers who were not married when delivering their infants ranged from 23% for women classified as “Other South American” to 59% among Dominican mothers (Table A3.1).

From 1996 through 1999, what proportion of Hispanic mothers preferred to communicate in their native language instead of English?

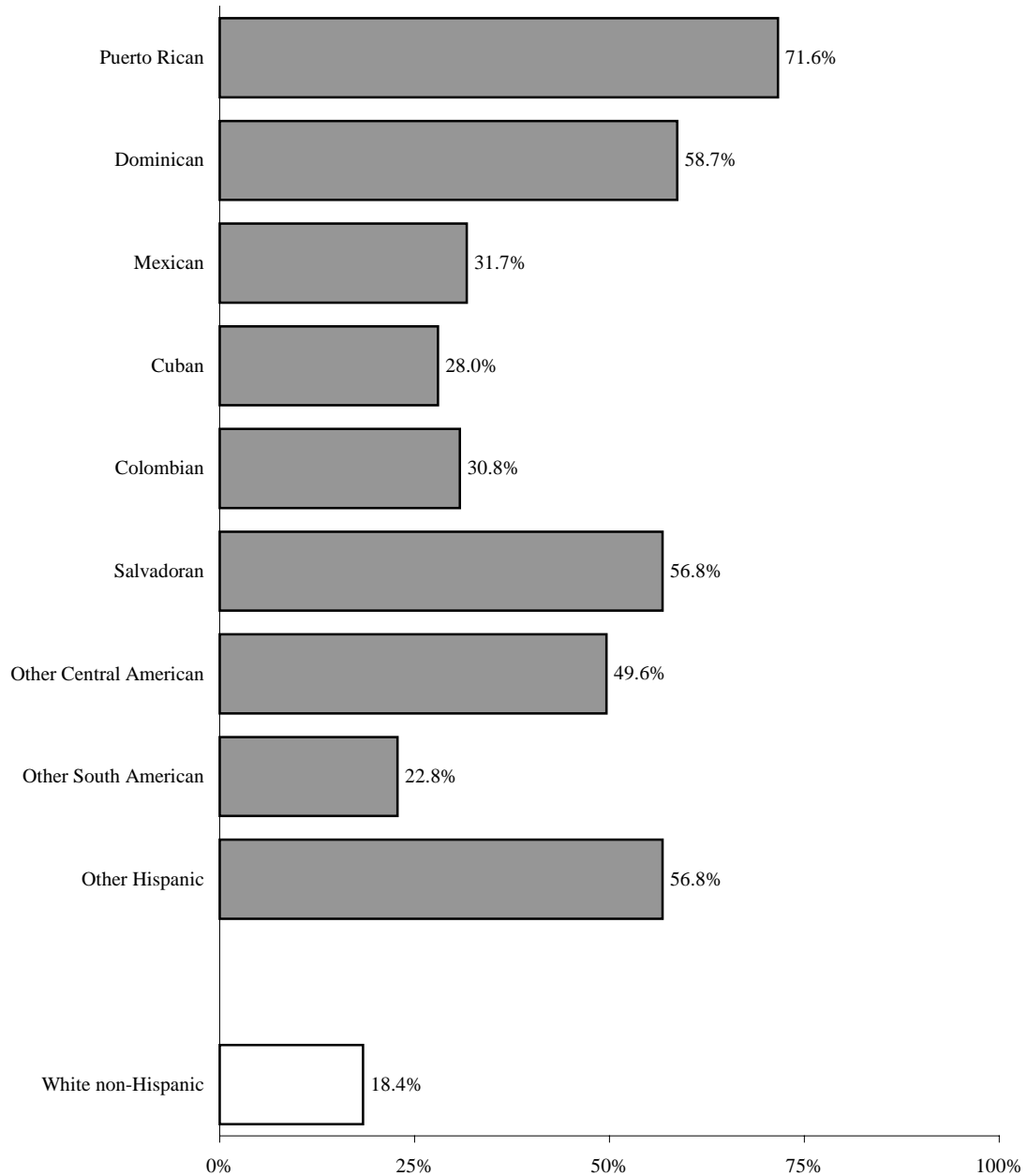
The percent of Hispanic mothers who preferred to converse in their native language¹ (primarily Spanish) rather than English showed wide variation across the Hispanic ethnic groups. Salvadorans were most likely to prefer Spanish to English (82%) while only 14% of Cubans preferred Spanish. Among the other Hispanic ethnic groups, the percent of mothers preferring Spanish to English varied from a low of 29% among Puerto Rican women to a high of 68% among women classified as “Other Central American” (Figure 3.4).

From 1996 through 1999, what proportion of Hispanic mothers were non-continental U.S.-born? How do data on Hispanic women compare with data for White non-Hispanic mothers?

With the exception of Puerto Rican, Cuban and “Other Hispanic” mothers, the vast majority of Hispanic mothers were non-continental U.S.-born. The percentage of continental U.S.-born mothers ranged from a low of 2% for Salvadoran mothers to a high of 70% for “Other Hispanic” mothers. The percentage of White non-Hispanic mothers who were non-continental U.S.- born was 7% (Figure 3.5). Among Puerto Rican mothers, the percent that were born in Puerto Rico and the United States Territories was 51%, while 48% were born in the continental United States, and 1% in a foreign country.

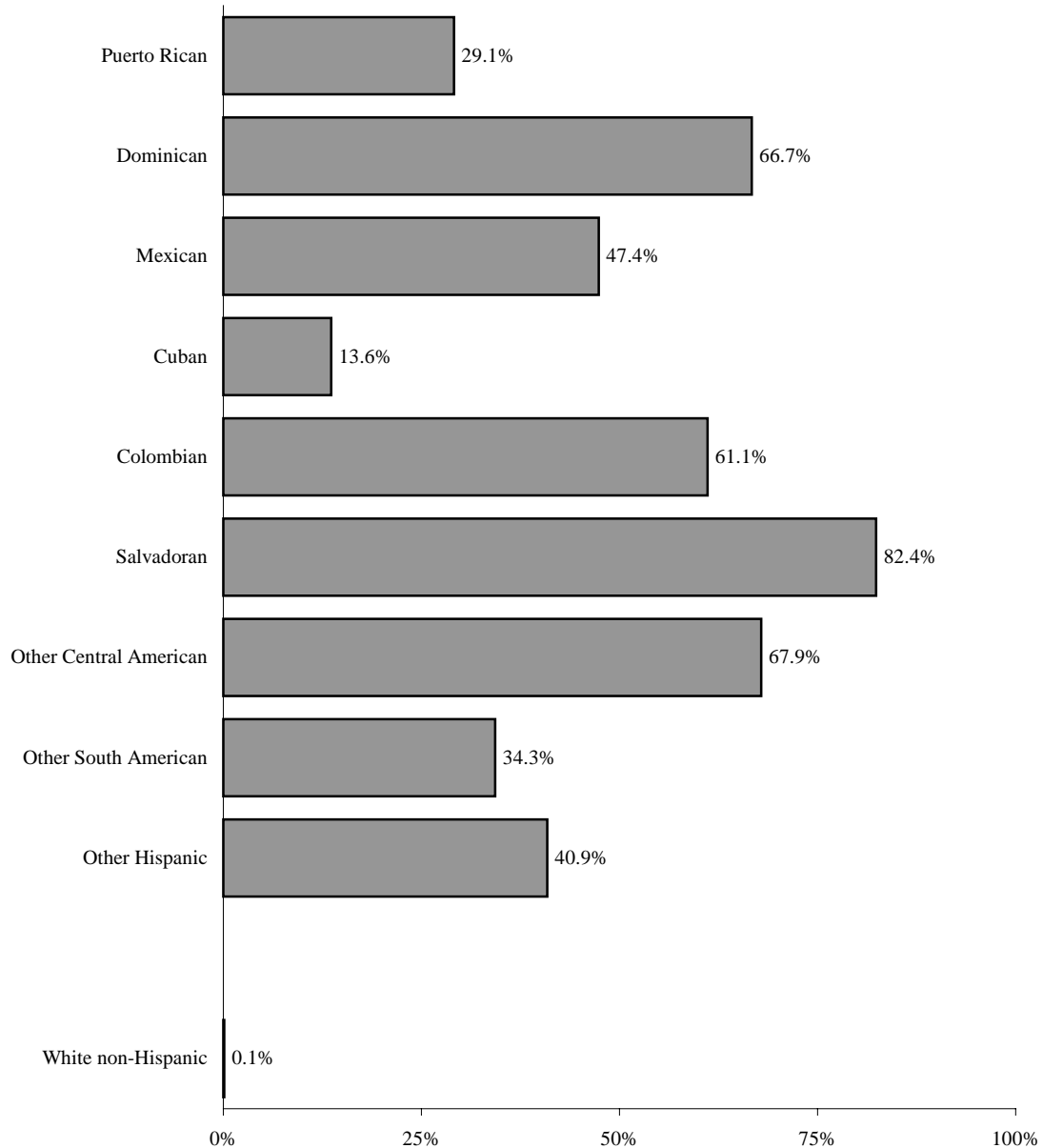
¹ Information on the mother’s language preference is collected from the mother at the time of birth, based on the birth certificate question, “In what language does the mother prefer to read or discuss health-related materials?”

Figure 3.4 Percentage Not Married Among Hispanic and White non-Hispanic Mothers by Ethnicity
Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A3.1)

**Figure 3.5 Percentage Preferring Spanish* Among
Hispanic and White
non-Hispanic Mothers by Ethnicity**
Massachusetts 1996-99

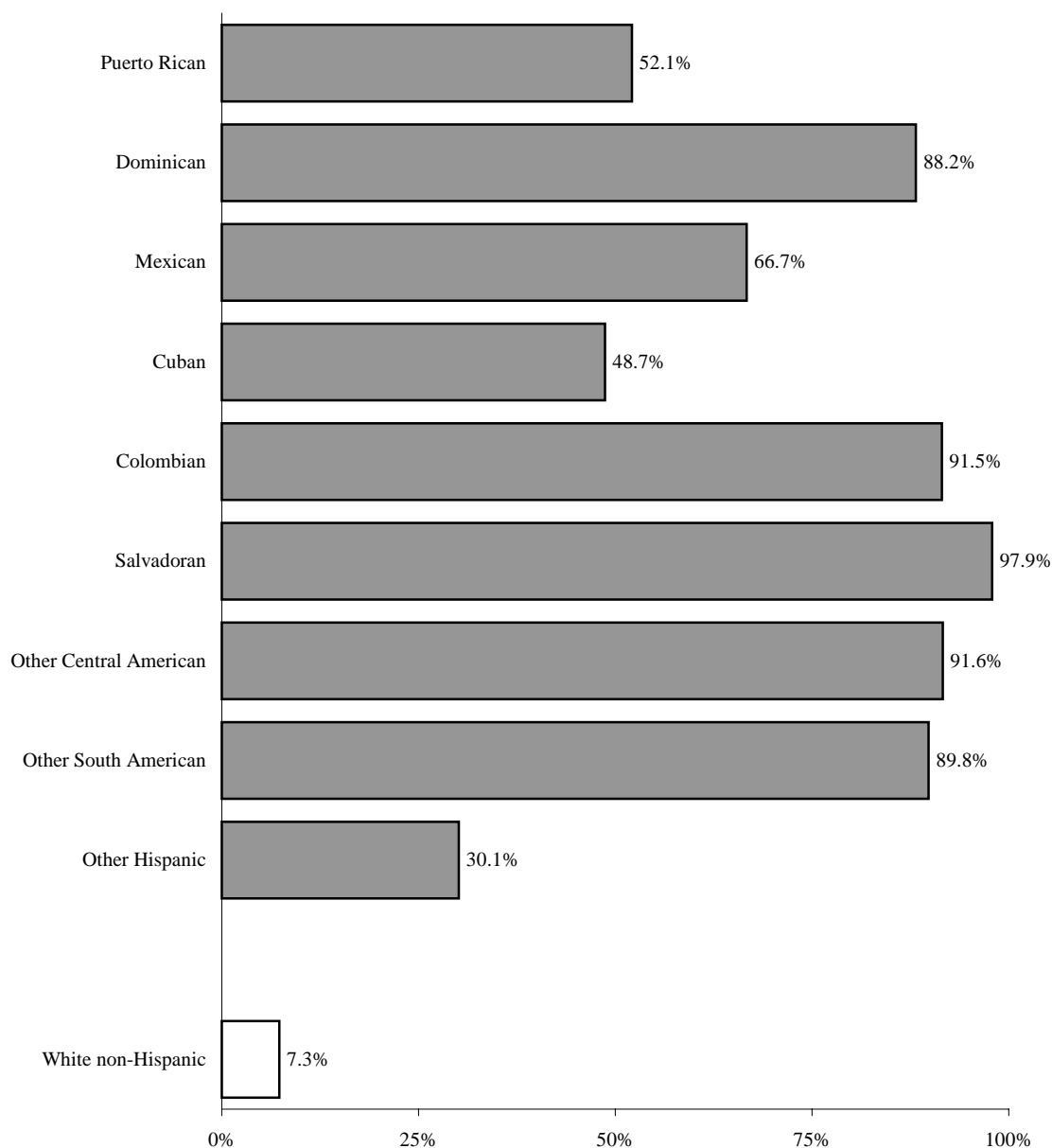


Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A3.1)

* Information on mother's language preference is collected from the mother at the time of birth, based on the birth certificate question, "In what language does the mother prefer to read or discuss health-related materials?"

**Figure 3.6 Percentage of non-continental U.S.-Born*
Hispanic and White non-Hispanic Mothers by
Ethnicity**

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A3.1)

* Non-continental U.S.-Born: Born outside of the continental United States. Women born in Puerto Rico, the Virgin Islands, and Guam are categorized non-continental U.S.-born in this report.

Chapter 4

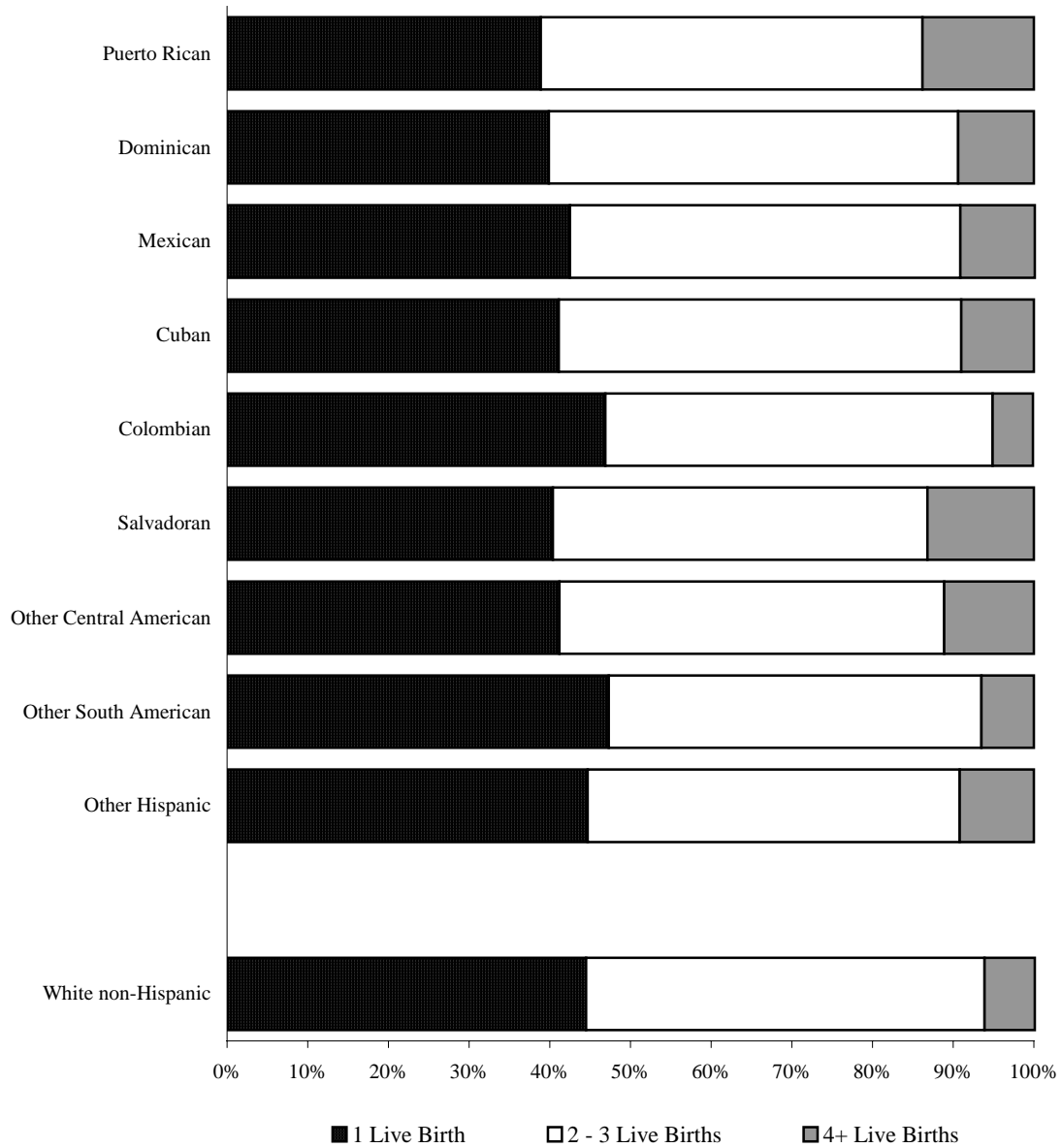
Medical and Other Risk Characteristics of Hispanic Mothers: 1996-1999

Did Hispanic mothers differ in the total number of live births they have ever had?

For Massachusetts births between the years of 1996 and 1999, slightly more than 40% of Hispanic mothers gave birth to their first child. The percentage of Hispanic mothers giving birth to their first child was similar to that observed among White non-Hispanic mothers, and did not show wide variation among the Hispanic ethnic groups included in this report. Approximately 48% of Hispanic mothers reported giving birth to their second or third child. Again there was little variation among the Hispanic ethnic groups in Massachusetts. The Hispanic ethnic groups who were most likely to report delivering their fourth or higher child were Puerto Ricans (14%) and Salvadorans (13%) (Figure 4.1).

Figure 4.1 Percent Distribution of Total Number of Live Births to Hispanic and White non-Hispanic Mothers by Ethnicity

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A4.1)

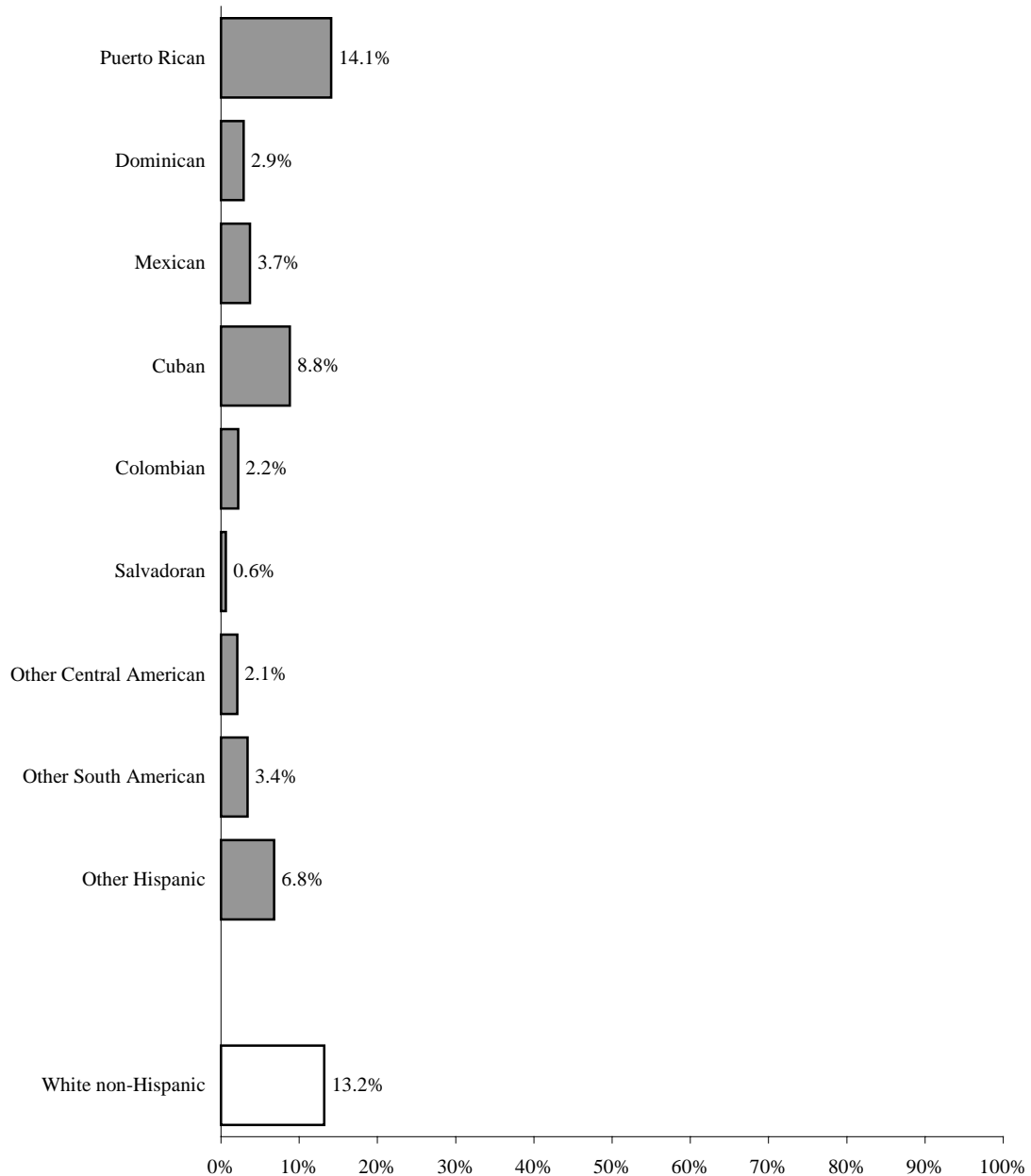
Between 1996 and 1999, what proportion of Hispanic mothers smoked cigarettes prior to and during pregnancy?

Hispanic mothers were generally less likely to report smoking cigarettes prior to and during pregnancy than White non-Hispanic mothers. Puerto Rican (14%), Cuban (9%) mothers, and mothers identified as “Other Hispanic” (7%), reported the highest smoking rates during pregnancy. Smoking among other Hispanic ethnic groups ranged from a low of less than 1% in Salvadoran mothers to 4% in Mexican mothers. With the exception of Puerto Rican mothers, these smoking rates are lower than the 13% figure reported for White non-Hispanic mothers in Massachusetts (Figure 4.2).

Between 1996 and 1999, did the proportion of Hispanic women who smoked cigarettes during pregnancy vary among teenage mothers?

Percentages of smoking during pregnancy were considerably lower for Hispanic teens than for White non-Hispanic teen mothers. The White non-Hispanic smoking rate for all teen mothers was three times higher than the rate for Hispanic teen mothers (10% vs. 33%, respectively). Mothers between the ages of 18 and 19 years old reported the highest percentages of smoking among teen mothers (11% for Hispanic mothers and 33% for White non-Hispanic mothers). Nine percent of Hispanic mothers aged 17 or less smoked during pregnancy compared with 31% of White non-Hispanic mothers.

Figure 4.2 Percentage of Hispanic and White non-Hispanic Mothers who Smoked During Pregnancy
Massachusetts 1996-99



Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A4.1)

What proportion of Hispanic mothers had medical risk factors that might have complicated their deliveries?

The prevalence of selected medical risk factors was higher among Hispanic mothers when compared to White non-Hispanic mothers. Conditions more frequently on the birth certificates of infants born to Hispanic mothers than White non-Hispanic mothers include anemia, diabetes, and hypertension.

“Other Hispanic” (5.7%) and Cuban mothers (5.6%) had hypertension reported in a higher proportion than White non-Hispanic mothers (3.9%). Proportions in the seven other Hispanic ethnic categories were comparable to that of White non-Hispanics, ranging from 2.8% in Colombian mothers to 3.9% in Dominicans (Figure 4.3).

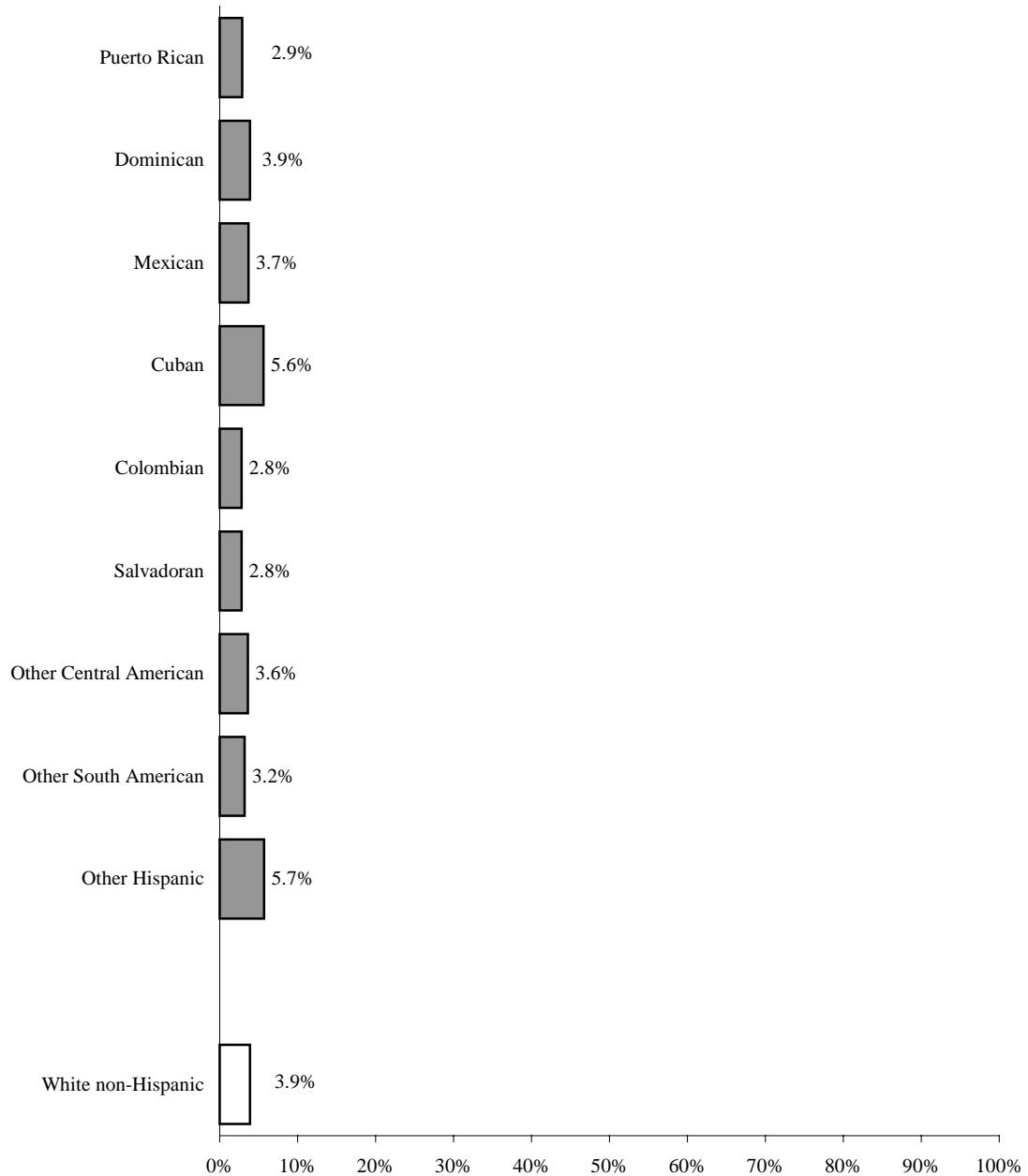
Diabetes was reported more frequently among Hispanic mothers than White non-Hispanic mothers (3%). Eight of the nine Hispanic ethnic groups reported a higher percentage of diabetes than White non-Hispanics, although some were only slightly higher. The percent of mothers with diabetes reported on their infants’ birth certificates ranged from a low of 2% among Cuban mothers to over 4% in mothers identified as “Other Hispanics” (Figure 4.4).

Almost 5% of Hispanic mothers, as compared to 1% of White non-Hispanic mothers, had anemia reported. All of the nine Hispanic ethnic groups showed anemia percentages that exceeded those reported for White non-Hispanics. The percent of mothers with anemia reported on their infants’ birth certificates ranged from 2% among Colombian mothers to over 5% in Puerto Rican mothers (Figure 4.5).

The percentage of mothers who were reported on the birth certificate as hepatitis B carriers was low for all Hispanic ethnic groups and for White non-Hispanic mothers. Only 0.1% of White non-Hispanic mothers reported being a hepatitis B carrier, compared to 0.1% of Puerto Rican mothers and 0.4% of Dominican mothers .

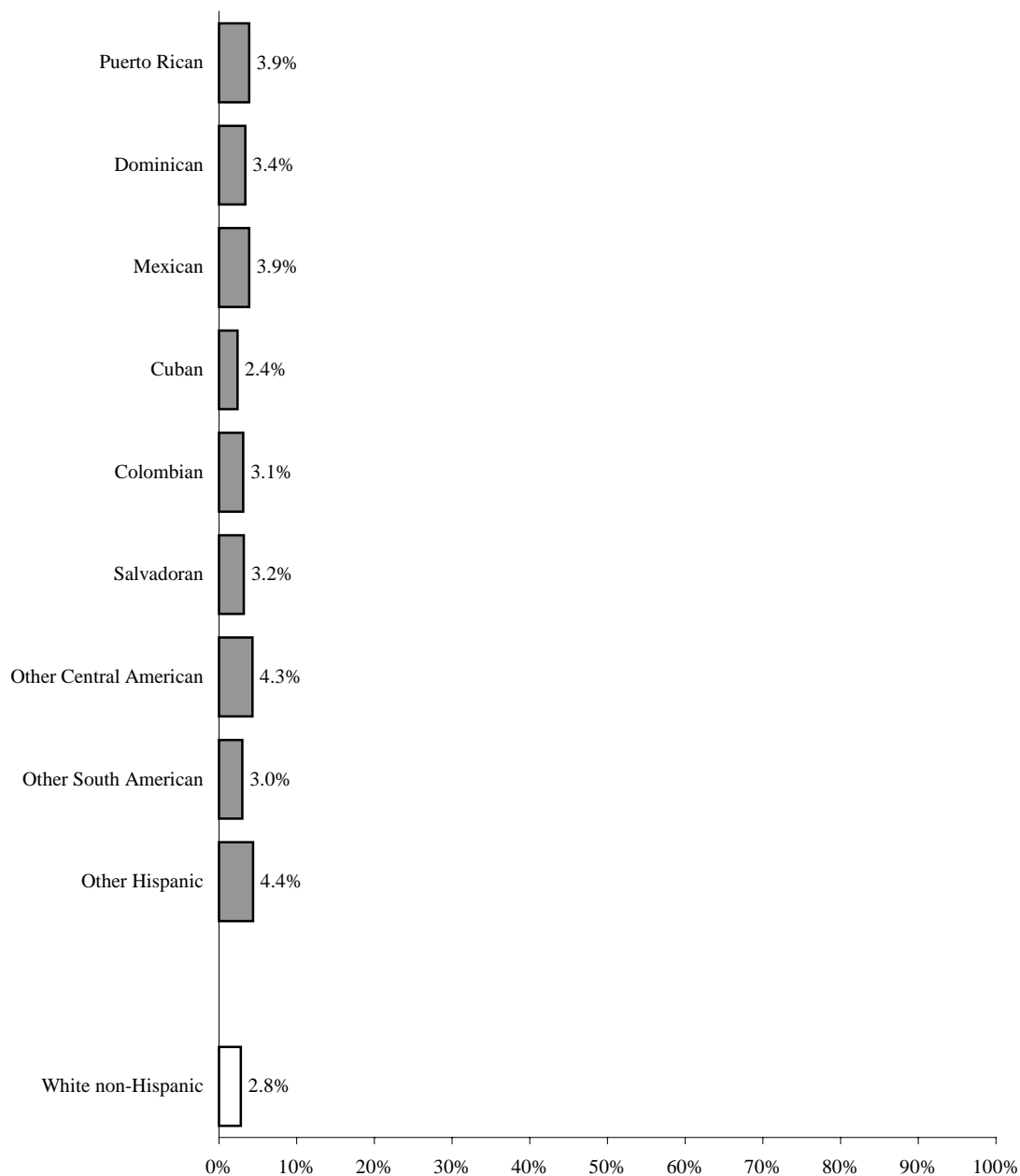
With the exception of Salvadorans (0.7%), Hispanic mothers had eclampsia reported slightly more than White non-Hispanic mothers. “Other Hispanic” and Cuban mothers reported the highest percentage of eclampsia, at 3.1% and 2.1% respectively.

Figure 4.3 Percentage of Hispanic and White non-Hispanic Mothers with Hypertension by Ethnicity
Massachusetts 1996-99



Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A4.1)

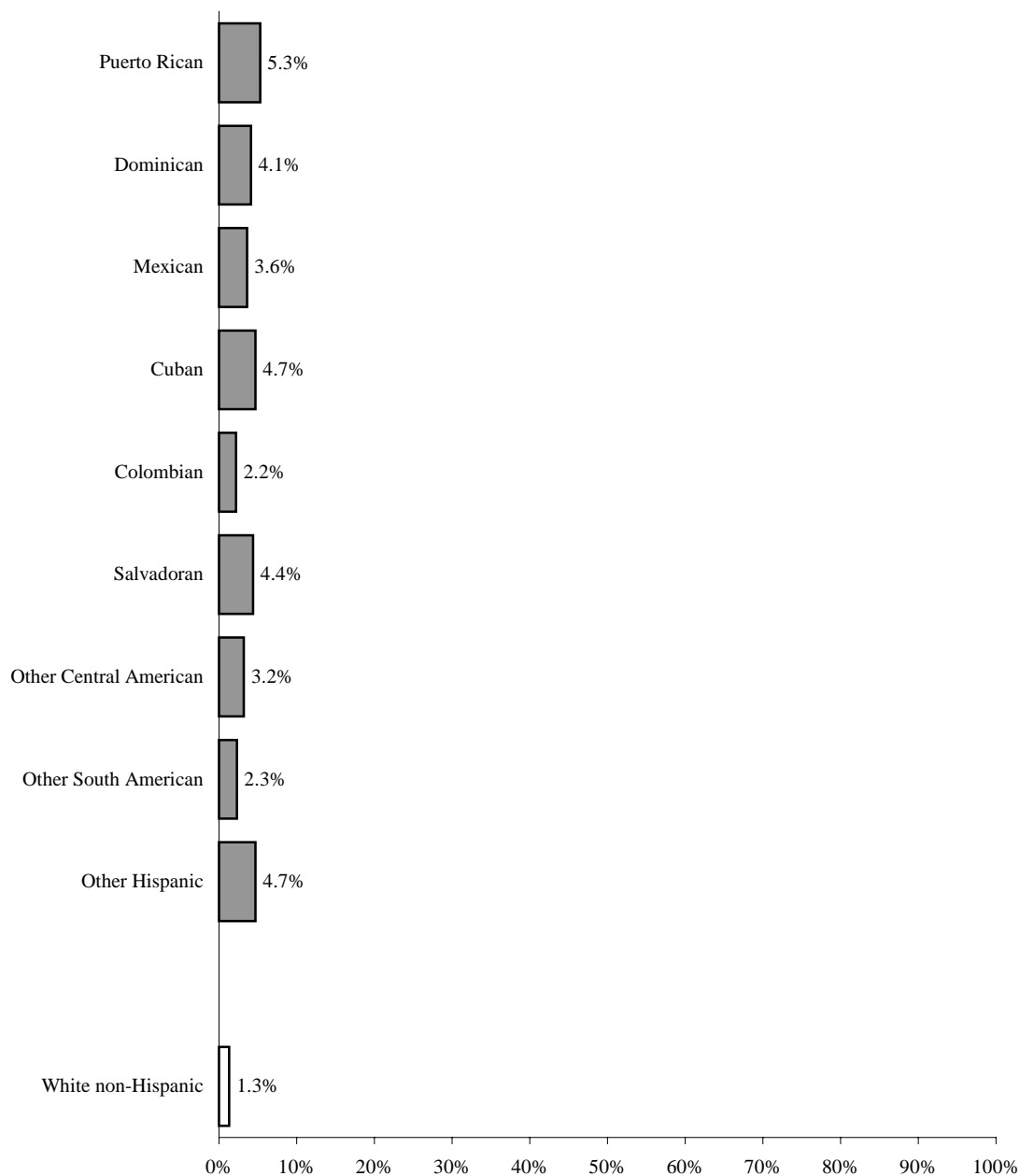
Figure 4.4 Percentage of Hispanic and White non-Hispanic Mothers with Diabetes* by Ethnicity
Massachusetts 1996-99



Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A4.1)

*Includes both gestational and other diabetes.

Figure 4.5 Percentage of Hispanic and White non-Hispanic Mothers with Anemia by Ethnicity
Massachusetts 1996-99



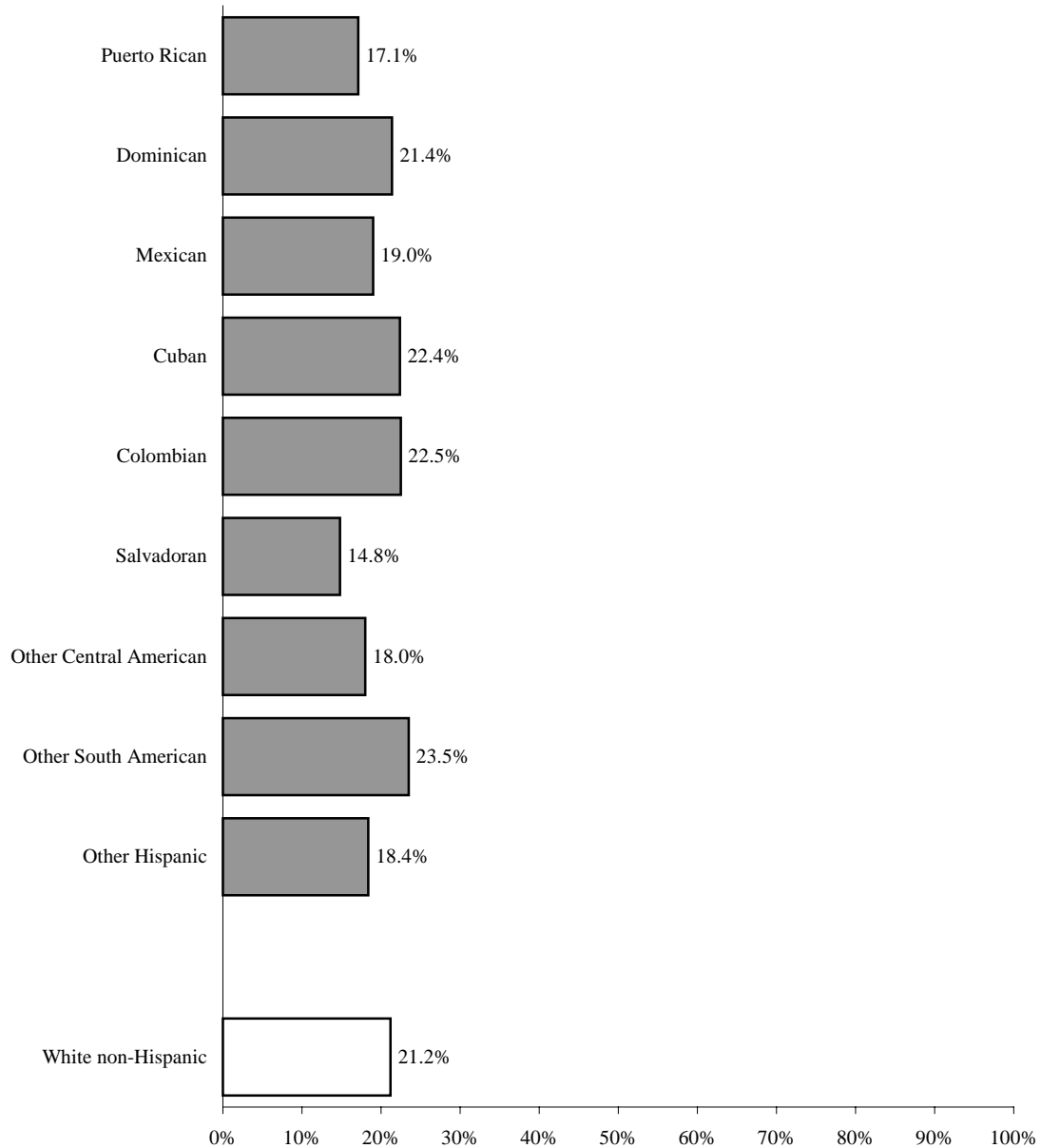
Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A4.1)

What proportion of Hispanic mothers had Cesarean section deliveries? How did the proportion of Cesarean section deliveries vary among Hispanic women?

Hispanic and White non-Hispanic mothers were equally likely to deliver their children by Cesarean section. The percentage of Hispanic mothers who delivered by Cesarean section ranged from a low of 15% among Salvadoran mothers to a high of 24% among mothers identified as being of “Other South American” ethnicities. The Cesarean section rate was 21% among White non-Hispanic mothers in Massachusetts (Figure 4.6).

Figure 4.6 Percentage of Hispanic and White non-Hispanic Mothers with Cesarean Sections* by Ethnicity

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A4.1)

*Includes both primary and repeat Cesarean sections. Excludes those with unknown mode of delivery.

Chapter 5

Prenatal Care among Hispanic Mothers: 1996-1999

What proportion of Hispanic women received adequate prenatal care¹? How did the proportion of mothers receiving adequate prenatal care vary among Hispanic mothers?

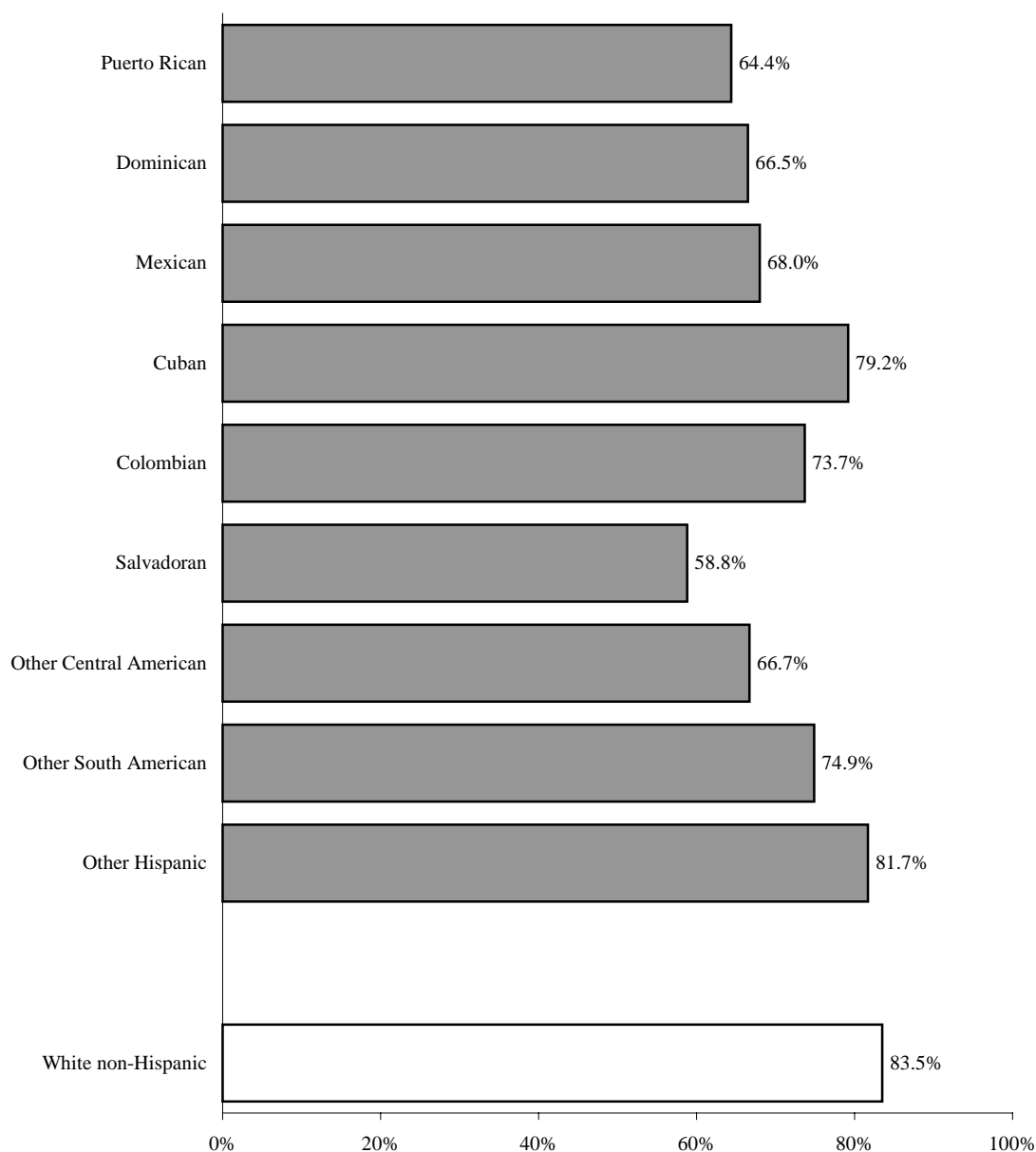
During 1996 through 1999, similar proportions of Cuban, “Other Hispanic” mothers, and White non-Hispanic mothers received adequate prenatal care: 79%, 82% and 84%, respectively. Rates were slightly lower among Colombian and “Other South American” mothers (74% and 75%, respectively). Rates were lower among Puerto Rican, Dominican, “Other Central America”, and Mexican mothers (ranging from 64% to 68%). The lowest rate was among Salvadoran mothers; only 59% received adequate prenatal care (Figure 5.1).

¹ Adequacy of prenatal care is a quantitative measure based on the timing and total number of prenatal visits; it is not a measure of the quality of care. Refer to the Glossary for a complete explanation.

Note: Changes reflected in the calculation of the Kessner Adequacy of Prenatal Care Index make the comparison of data for prenatal care presented in this report with data prior to 1996 inappropriate.

Figure 5.1 Percent Distribution of Adequate Prenatal Care* Hispanic and White non-Hispanic Mothers by Ethnicity

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A5.1)

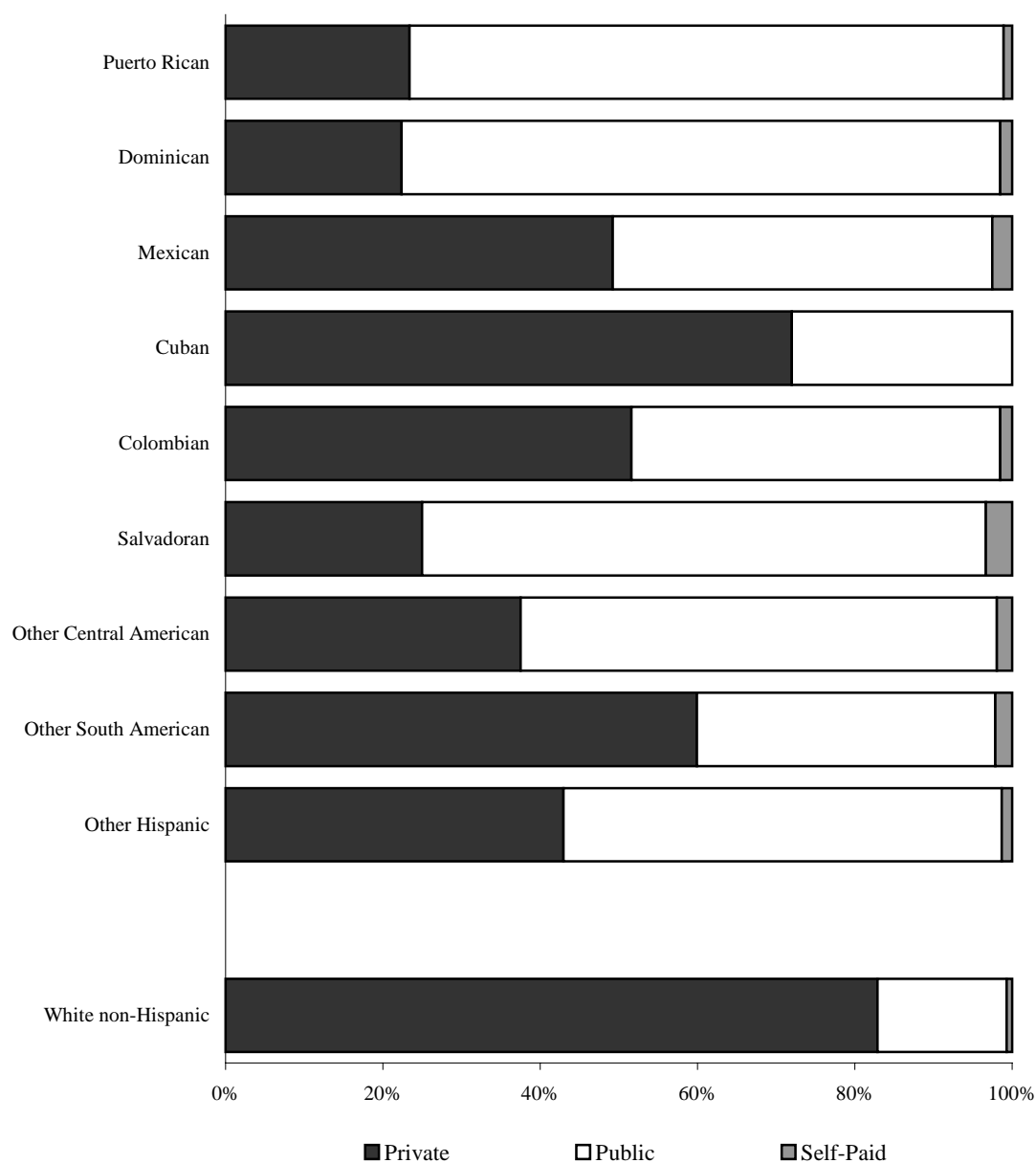
*Adequacy of prenatal care is a quantitative measure based on prenatal visits; it is not a measure of the quality of care. See glossary for a complete explanation. Excludes cases with unknown adequacy.

How did the sources of prenatal care payment for Hispanic mothers vary?

Cuban and “Other South American” mothers reported the highest percentage of prenatal care paid for by private insurance (Commercial indemnity plan, commercial managed care (HMO, PPO/IPP/IPA and other private insurance), 71% and 59%, respectively. Rates were lower among Mexican, “Other Hispanic” and Colombian mothers (ranging from 43% to 51%). Rates were lowest among Puerto Rican, Dominican, Salvadoran and “Other Central American” mothers (ranging from 22% of Dominican mothers to 37% of “Other Central American” mothers) (Figure 5.2).

Use of public funds as the primary source of payment for prenatal care for Hispanic mothers ranged from 28% of Cuban mothers to 75% of Dominican mothers compared to 16% of White non-Hispanic mothers. Percentages were highest among Salvadoran and “Other Central American” mothers (75%). Three percent of Salvadoran and Mexican mothers paid for prenatal care themselves compared to less than 1% of White non-Hispanic mothers.

**Figure 5.2 Percent Distribution of Prenatal Care
Payment Source* Among Hispanic and White
non-Hispanic Mothers by Ethnicity**
Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A5.1)

* Prenatal care payment source: Private= Commercial indemnity plan, commercial managed care (HMO, PPO/IPP/IPA, and other), or other private insurance; Public= Government programs including Commonhealth, Healthy Start, Medicaid/MassHealth, and Medicare (may also be HMO or managed care), or free care.

Where did Hispanic mothers receive prenatal care?

Hispanic mothers, with the exception of Salvadoran and “Other Central American” mothers were more likely to receive their prenatal care at physicians' offices than at other sites. Among Salvadoran mothers, prenatal care was most often obtained at a community health center (55%), with physician's office (17%), hospital clinics (22%), and HMO's (6%) used less frequently. In sharp contrast, only 2% of White non-Hispanic mothers received their prenatal care at a community health center while 83% of them received their prenatal care at private physicians' offices. Among Hispanic mothers, “Other South American” (61%) and Cuban (60%) mothers had the highest proportion seen at physician offices. This proportion was lower among Puerto Rican, Dominican, Mexican, Colombian, “Other Central American”, and “Other Hispanic” mothers (ranging from 33% for Dominican mothers to 54% for Mexican mothers).

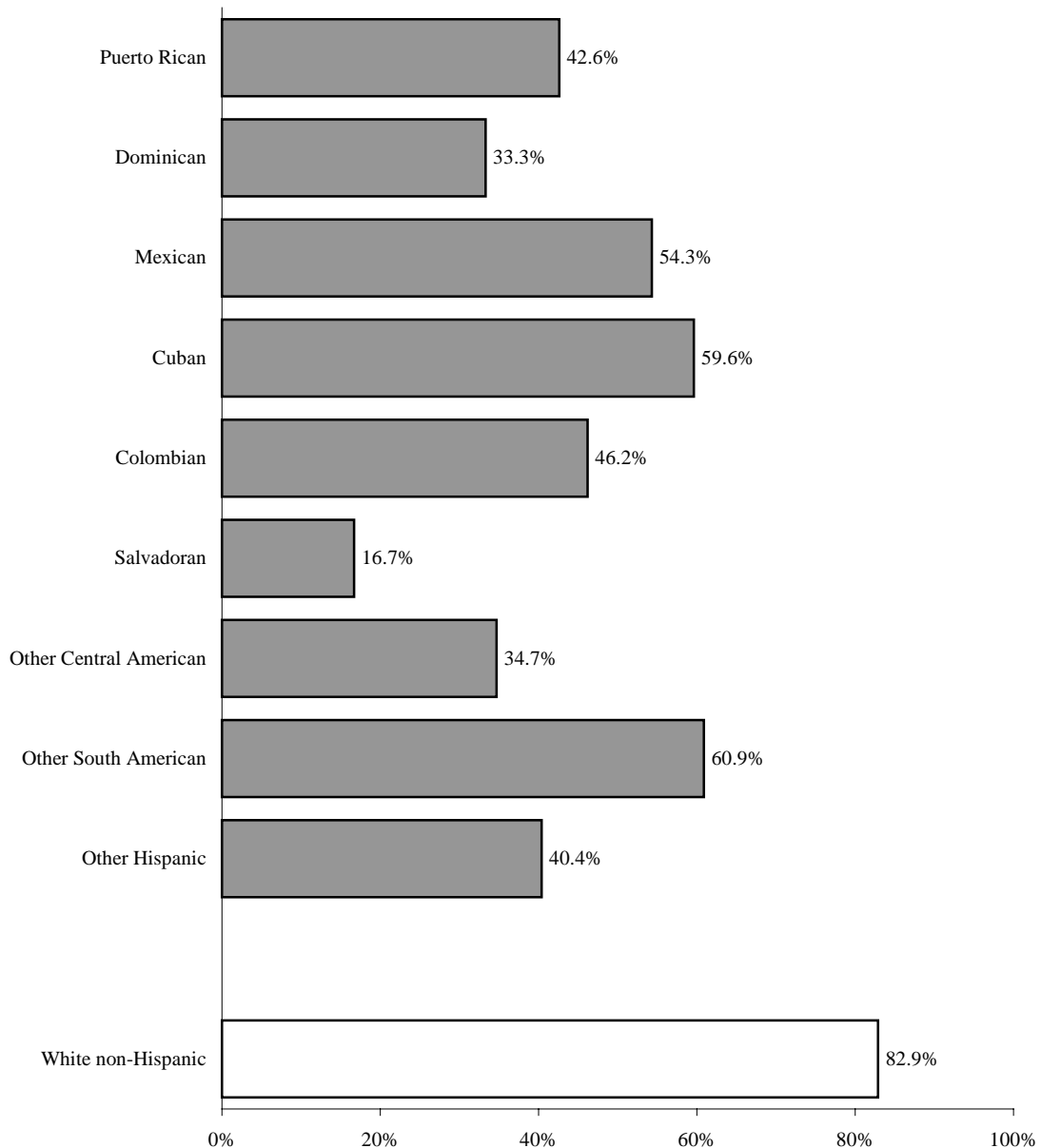
Use of hospital clinics and community centers as the site of prenatal care also varied widely by ethnicity. Dominican, Salvadoran, and “Other Central American” mothers accounted for over half of all prenatal care seen at these sites while this proportion was considerably smaller for Cuban and “Other South American” mothers - at less than 30% for each of these groups (Figure 5.3-5.6).

What type of practitioner did Hispanic mothers see for their prenatal care?

Seventy-five percent of Hispanic mothers received their prenatal care from physicians (MD-Ob/Gyn), making this arrangement the most typical (range from 50% to 86%). As a comparison, 9 out of 10 White non-Hispanic mothers received their prenatal care from physicians (MD-Ob/Gyn). Hispanic mothers received their prenatal care from midwives more than White non-Hispanic mothers. Twenty percent of Hispanic mothers received their prenatal care from midwives compared to 9% for White non-Hispanic mothers. About 94% of midwife-delivered prenatal care among Hispanic mothers were by certified nurse midwives (CNM's). Salvadoran and “Other Central American” mothers had much higher percentages of midwife-delivered prenatal care than other Hispanic groups, 45% and 32%, respectively (Table A5.1).

Figure 5.3* Percentage of Physician's Office as Site of Prenatal Care Among Hispanic and White non-Hispanic Mothers by Ethnicity

Massachusetts 1996-99

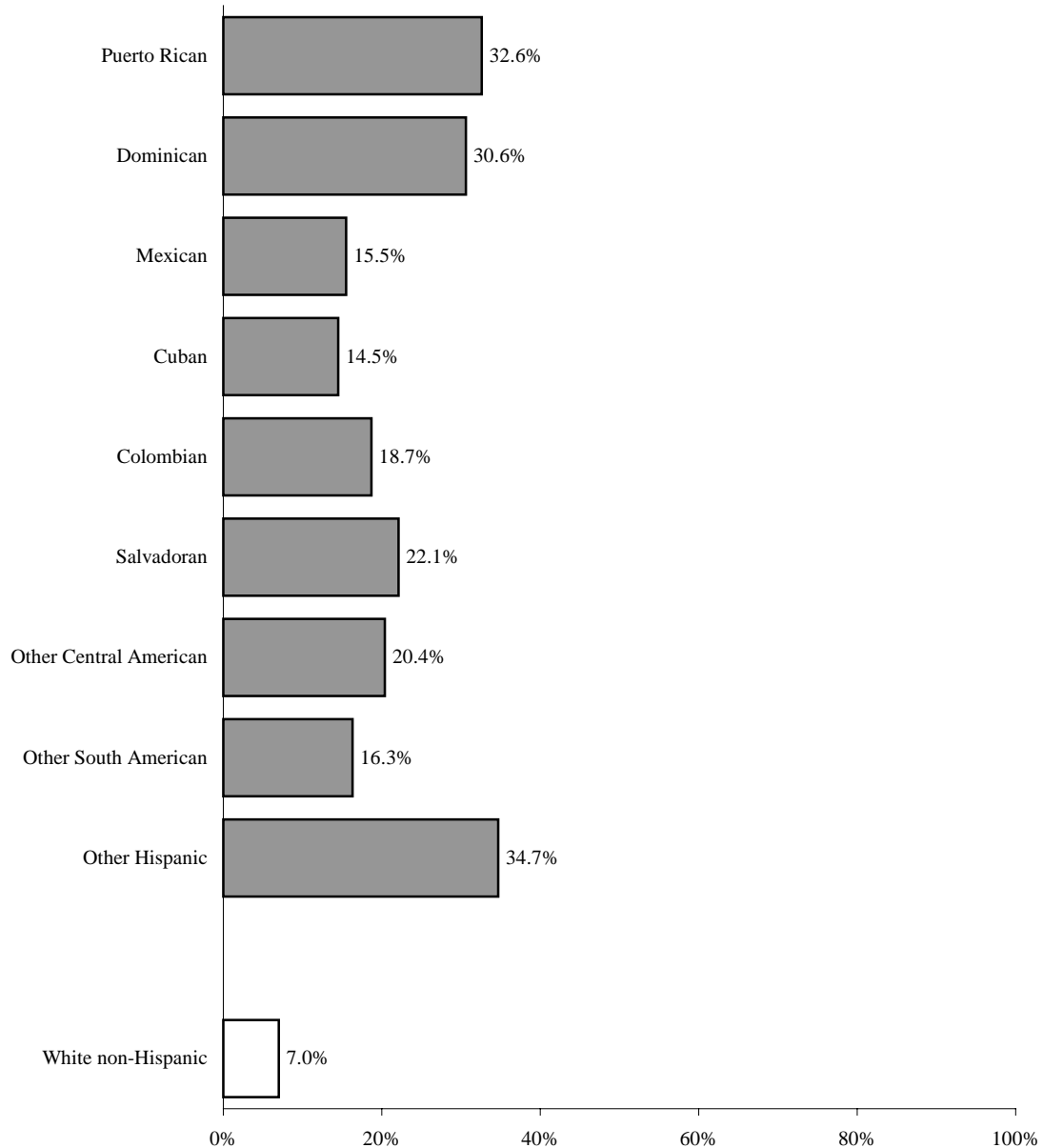


Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A5.1)

*See figures 5.4 – 5.6 for other prenatal care sites.

Figure 5.4* Percentage of Hospital Clinic as Site of Prenatal Care Among Hispanic and White non-Hispanic Mothers by Ethnicity

Massachusetts 1996-99

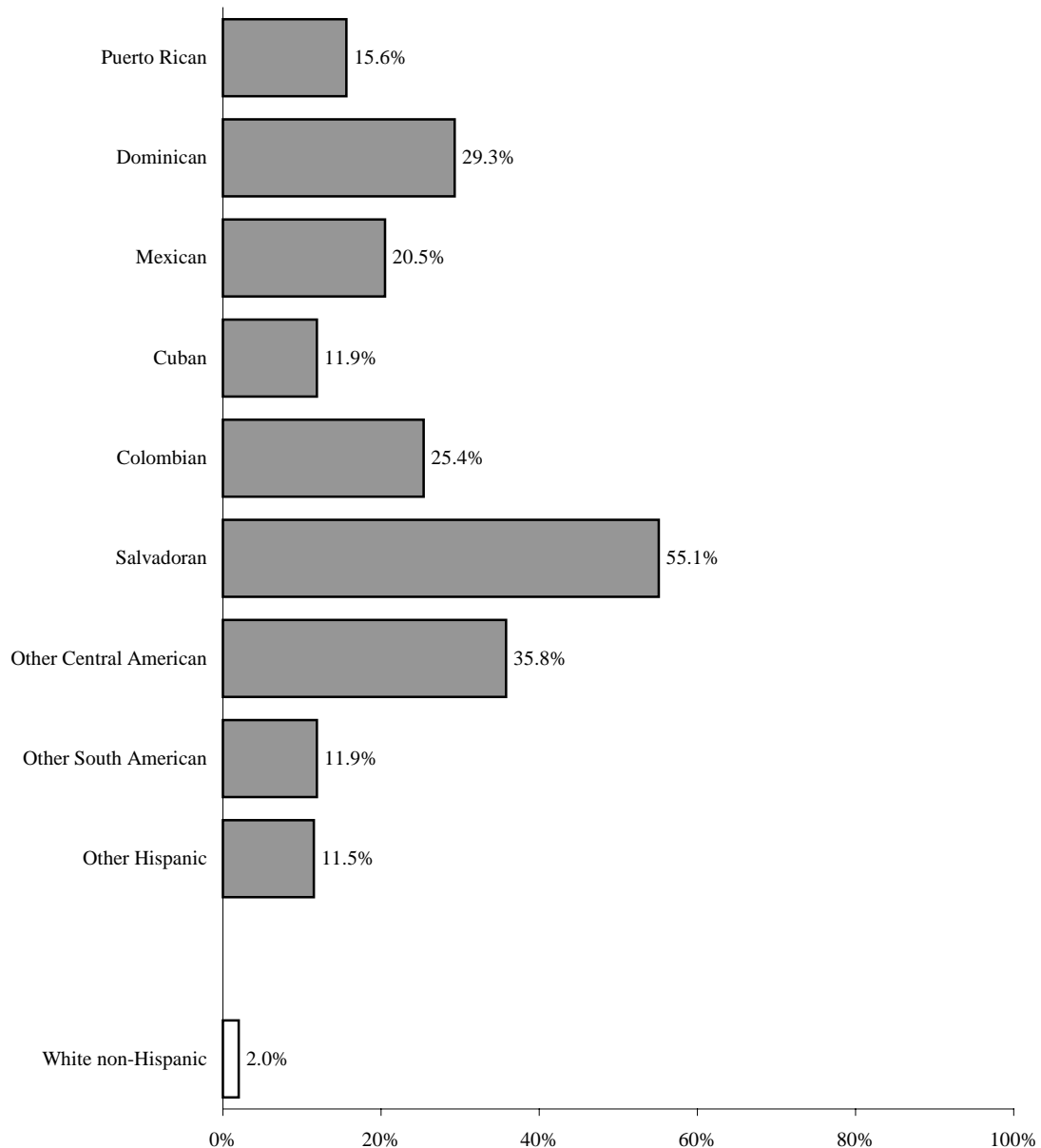


Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A5.1)

*See figures 5.3, 5.5-5.6 for other prenatal care sites.

**Figure 5.5* Percentage of Community Health Center
as Site of Prenatal Care Among Hispanic and White
non-Hispanic Mothers by Ethnicity**

Massachusetts 1996-99

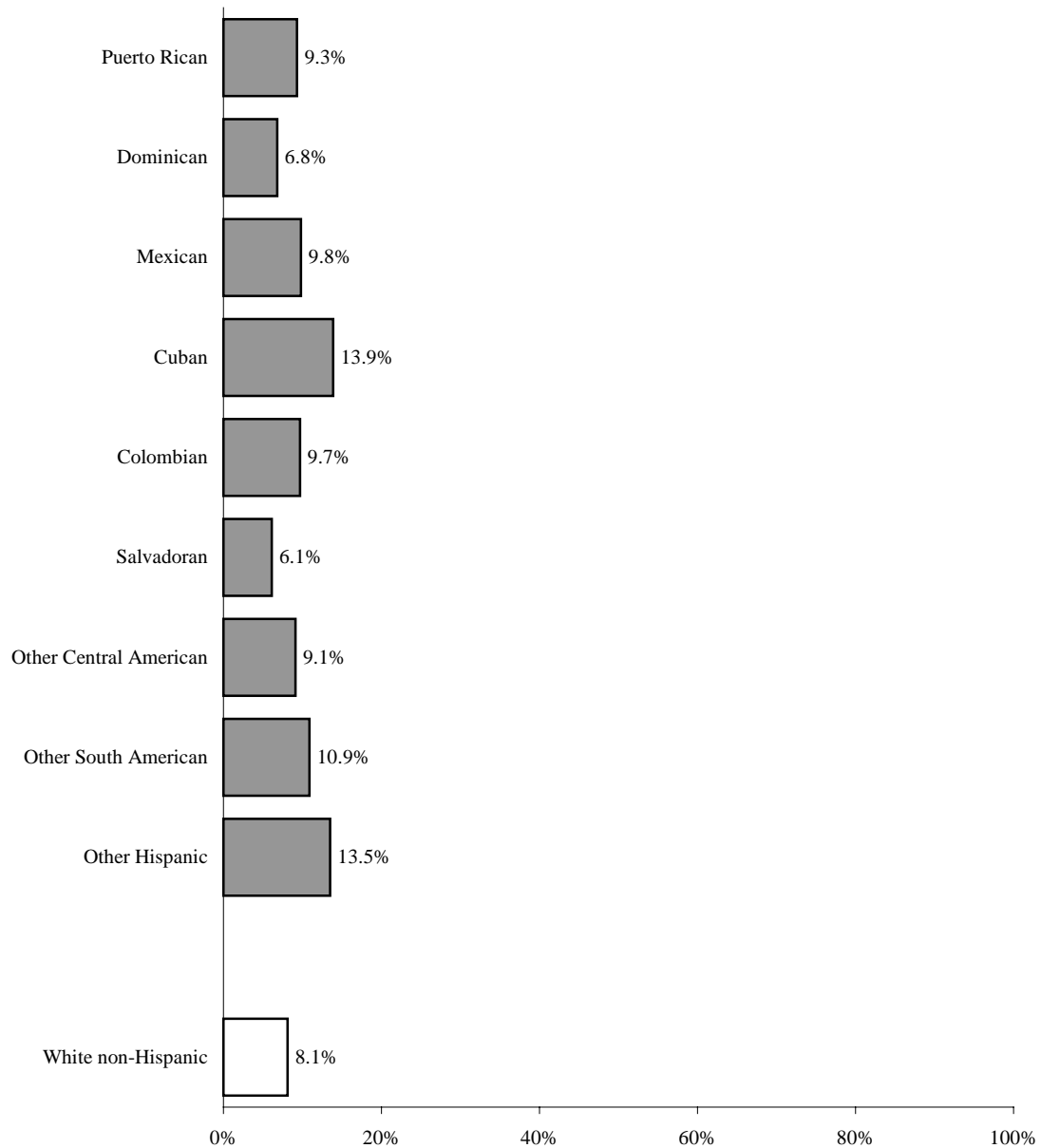


Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A5.1)

*See figures 5.3, 5.4 and 5.6 for other prenatal care sites.

**Figure 5.6* Percentage of HMO and Other Facilities
as Site of Prenatal Care Among Hispanic and White
non-Hispanic Mothers by Ethnicity**

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A5.1)

*See figures 5.3 – 5.5 for other prenatal care sites.

How did the prevalence of breastfeeding² vary among Hispanic mothers?

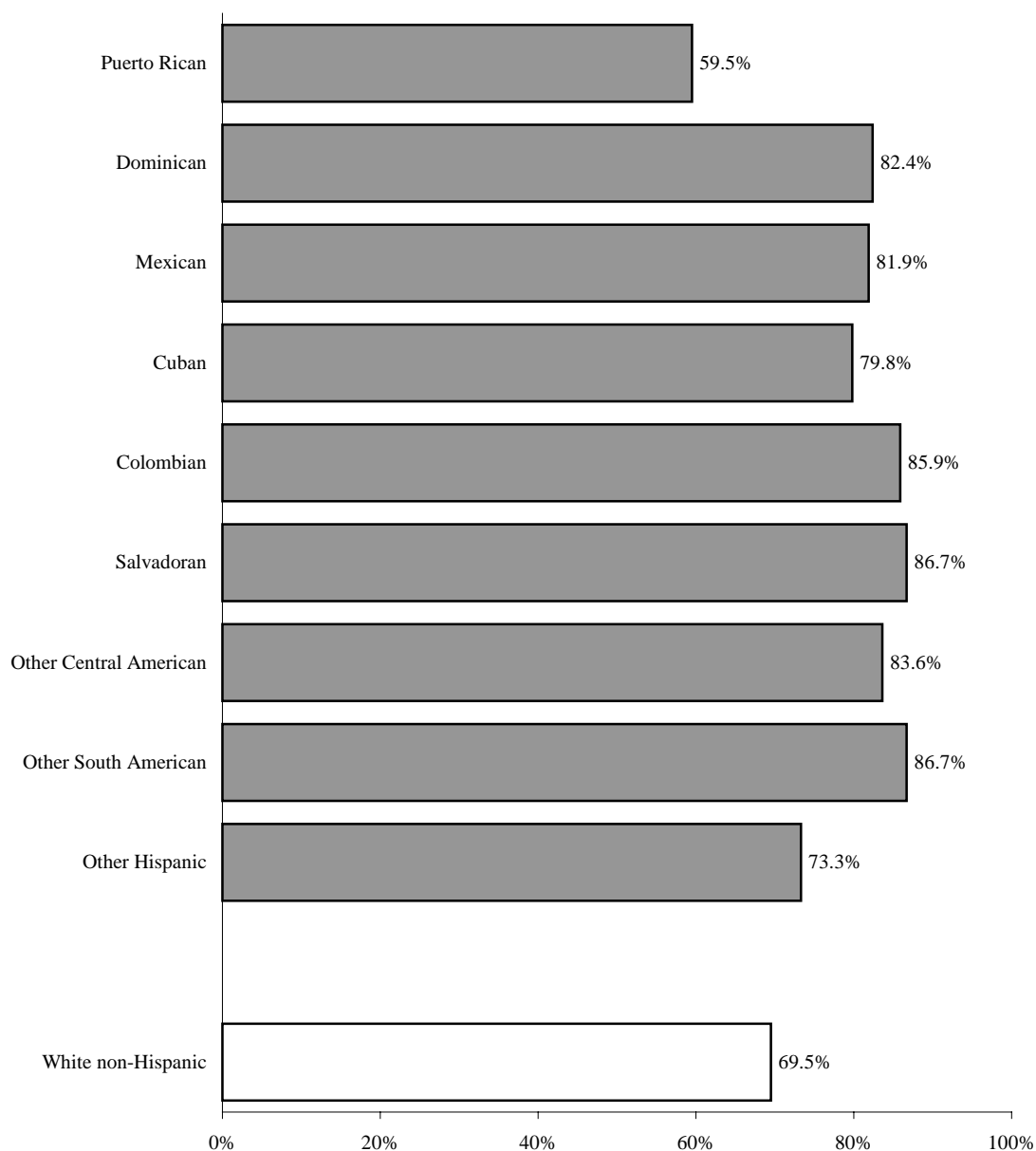
The prevalence of breastfeeding² tended to be higher overall among Hispanic mothers, with the exception of Puerto Rican mothers (60%), as compared to White non-Hispanic mothers (70%). Salvadoran and “Other South American” mothers had the highest rates (87%). Rates were slightly lower for Dominican, Mexican, Cuban, Colombian, and “Other Central American” mothers (ranging from 80% to 86%). Rates were lower among “Other Hispanic” mothers (73%) (Figure 5.7).

What percentage of Hispanic mothers named a pediatric provider on the birth certificate?

At least 91% of all Hispanic mothers named a pediatric provider. Rates were lowest among Cuban and Salvadoran mothers (91%) as compared to 98% among White non-Hispanic mothers (Table A5.1).

² Mother was breastfeeding or was intending to breastfeed at the time the birth certificate was completed.

Figure 5.7 Percent Distribution of Hispanic and White non-Hispanic Mothers who Intended to Breastfeed* by Ethnicity
Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A5.1)

* Mother was breastfeeding or was intending to breastfeed at the time the birth certificate was completed.

Chapter 6

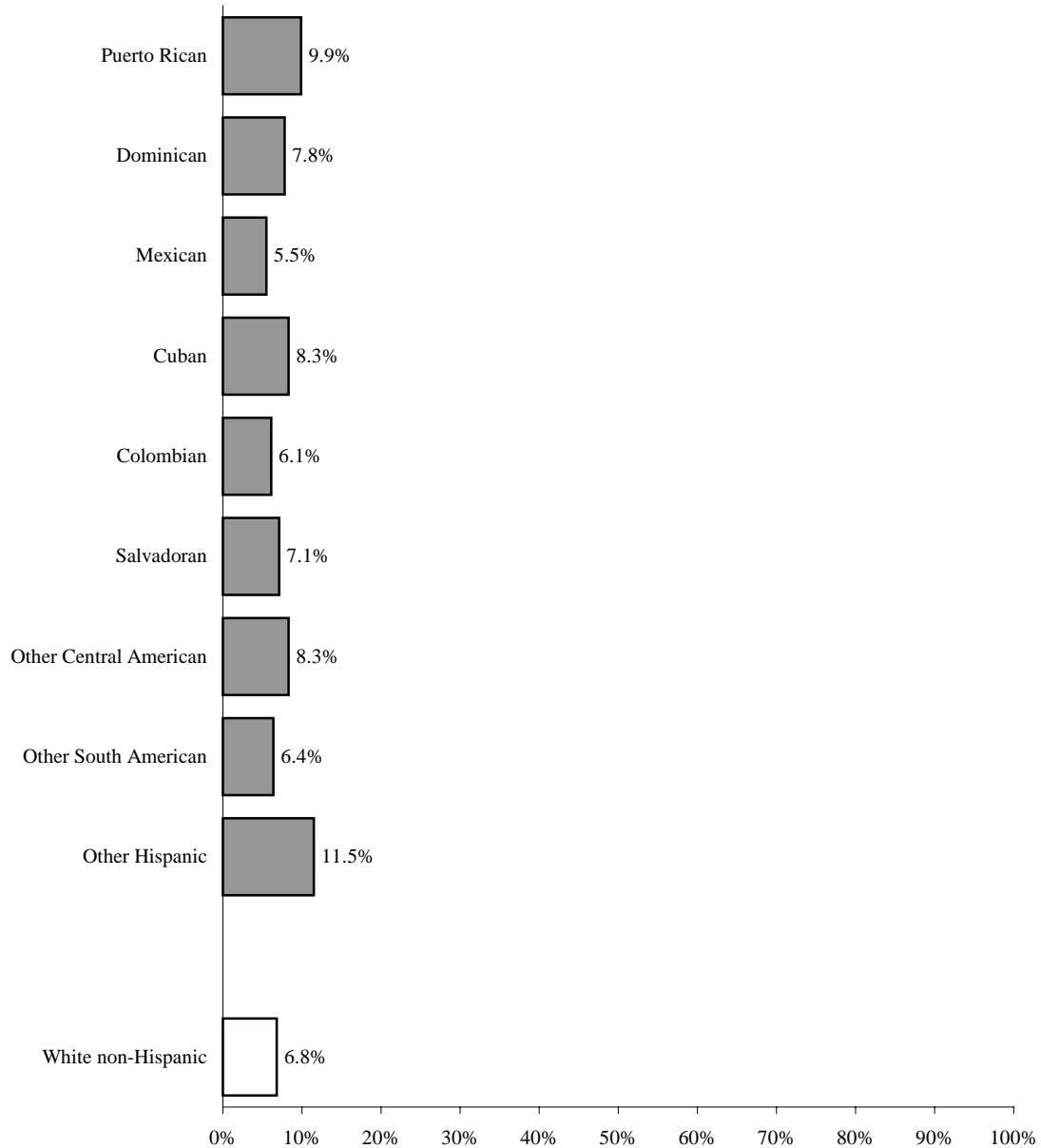
Birth Outcomes and Infant Health Characteristics of Hispanic Infants in Massachusetts: 1996-1999

What proportion of Hispanic births occurred before the 37th week of gestation (also known as early gestation or preterm births)?

Infants born before the completion of the 37th week of gestation are at greater risk for illnesses and death than are infants who are born at full term. Overall, with the exception of Mexican, Colombian and “Other South American” mothers, Hispanic mothers had a greater proportion of preterm births than did White non-Hispanic mothers (7%). Rates were highest among “Other Hispanic” mothers (12%) and Puerto Rican mothers (10%). Rates were slightly lower among Dominican, Cuban, Salvadoran, and “Other Central American” mothers (ranging from 7% to 8%) but still higher than those for White non-Hispanic mothers. Among Hispanic mothers, Mexican mothers had the lowest rate of delivering preterm infants (6%) (Figure 6.1).

**Figure 6.1 Percentage of Preterm* Births Among
Hispanic and White non-Hispanic Mothers by
Ethnicity**

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A6.1)

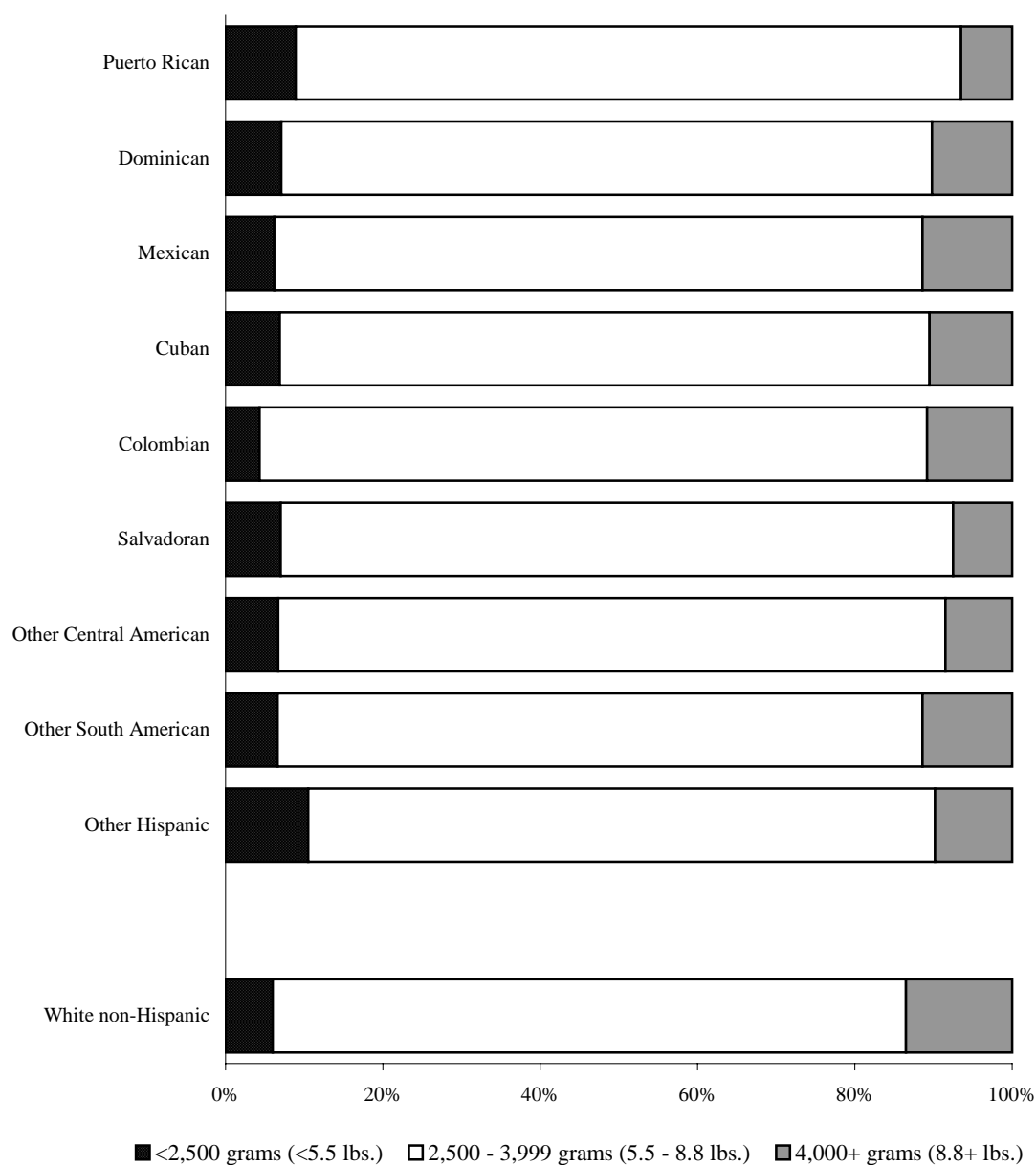
* Preterm is defined as gestational age less than 37 weeks

What proportion of Hispanic births were of low birthweight? Did the proportion of low birthweight infants vary among Hispanic groups?

Low birthweight infants weighing less than 2,500 grams (5.5 pounds) are at increased risk of illness and death. Compared to other Hispanic and White non-Hispanic mothers in Massachusetts, Colombian mothers delivered the lowest percentage of low birthweight infants (4%). Among White non-Hispanic mothers, 6% of infants were low birthweight. Percentages among Dominican, Mexican, Salvadoran, “Other Central American” and “Other South American” mothers (6-7%) were comparable to White non-Hispanic mothers. Percentages were highest among “Other Hispanic” mothers (11%) and Puerto Rican mothers (9%) (Figures 6.2 and 6.3).

**Figure 6.2 Percent Distribution of Infant Birthweight
Among Hispanic and White Non-Hispanic Mothers
by Ethnicity**

Massachusetts 1996-99

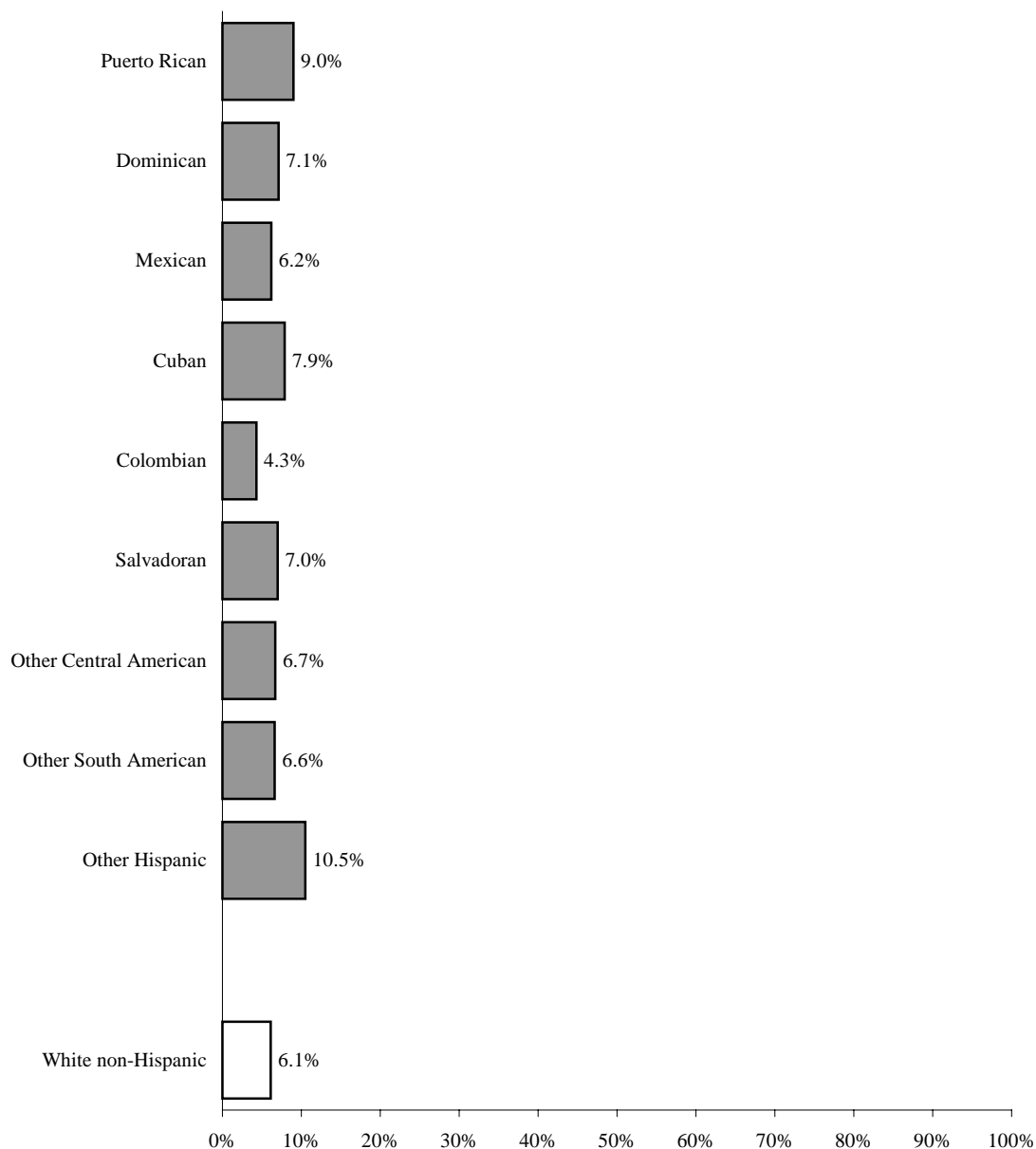


Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A6.1)

* Low birthweight defined as less than 2,500 grams (5.5 lbs.)

**Figure 6.3 Percentage of Low Birthweight* Infants to
Hispanic and White non-Hispanic Mothers by
Ethnicity**

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A6.3)

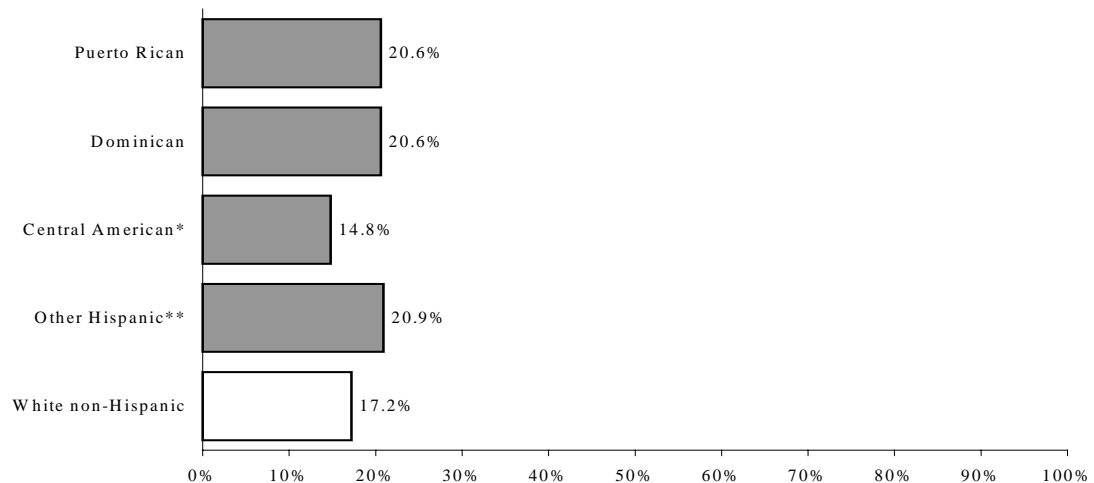
* Low birthweight defined as less than 2,500 grams (5.5 lbs.)

From 1996 through 1999, what percentage of Hispanic women delivered a very low birthweight infant in Massachusetts? Did the proportion of very low birthweight infants vary among Hispanic groups?

Very low birthweight infants weigh less than 1,500 grams (3.3 pounds) and are at even greater risk of illness and death than low birthweight infants. When compared to all other groups, the percentages of very low birthweight infants for Mexican, Colombian, Salvadoran, “Other Central American”, and “Other South American” mothers were comparable to the rates for White non-Hispanic infants (1%) (Table A6.3). Rates were higher among Puerto Rican and Dominican mothers (2%), and highest among “Other Hispanic” mothers (3%). However, it should be noted that these percentages are based on small numbers and should be interpreted with caution. Among all low birthweight infants born to Hispanic mothers (<2,500 grams) during the years 1996 through 1999, 21% of Puerto Rican, Dominican, and “Other Hispanic” mothers gave birth to very low birthweight infants. The percent of Central American mothers giving birth to a very low birthweight infant was lower, at 15%. Among White non-Hispanic mothers giving birth to low birthweight infants, 17% percent gave birth to a very low birthweight infant (Figure 6.4).

Note: The detailed low birthweight analysis that follows (beginning with Figure 6.4) includes only those ancestry groups with sufficient numbers of low birthweight infants for the four-year period, 1996-1999, to produce reliable statistics.

**Figure 6.4 Percentage of Very Low Birthweight Infants¹ Among all Low Birthweight Infants² of Hispanic and White non-Hispanic Mothers
Massachusetts 1996-99**



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A6.10)

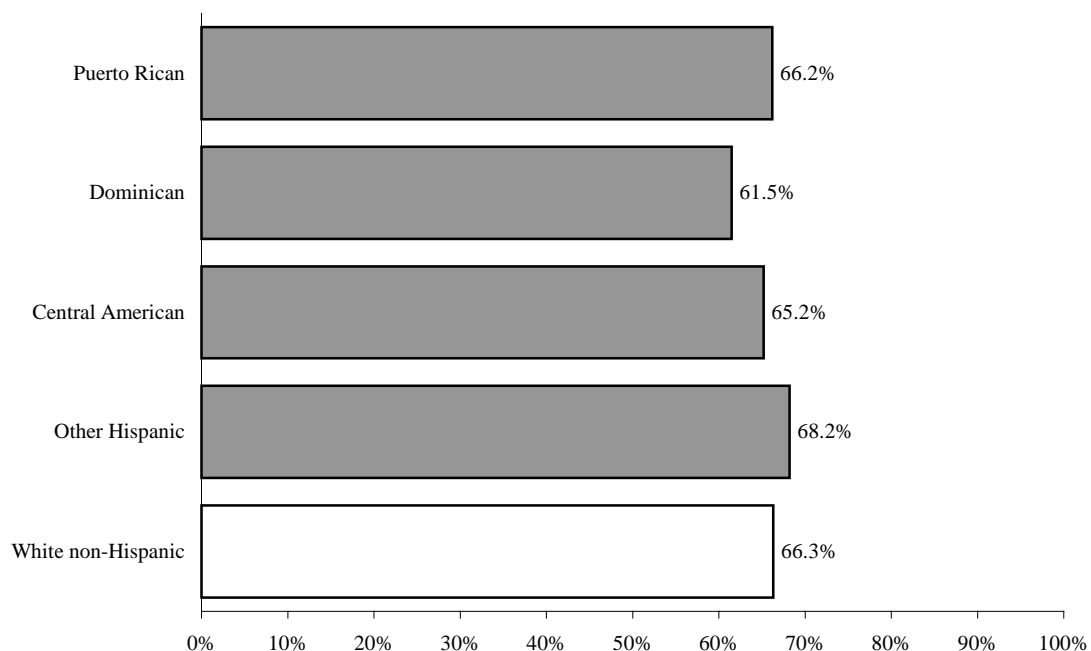
¹Infants with birthweight < 1,500 grams (<3.3 lbs.). ² Infants with birthweight <2,500 grams (<5.5 lbs.)

* Includes ethnicities listed as "Salvadoran" and "Other Central American" in previous figures. ** Includes ethnicities listed as "Colombian", "Cuban", "Mexican", "Other South American" and "Other Hispanic" in previous figures.

From 1996 through 1999, what percentage of Hispanic women gave birth to a low birthweight infant with a gestation period of less than 37 weeks?

There was a tendency for low birthweight pregnancies to be of short gestation regardless of the mother's ethnicity. During the years 1996-1999, low birthweight infants of Dominican mothers had the lowest percent of short gestation periods (62%), while the highest percent of short gestation pregnancies was observed among low birthweight infants born to "Other Hispanic"¹ mothers (68%). Among mothers giving birth to low birthweight infants, approximately 66% of Puerto Rican mothers, 65% of Central American² mothers, and 66% of White non-Hispanic mothers gave birth to a low birthweight infant with a short gestation period (Figure 6.5).

**Figure 6.5 Percentage of Infants with Gestational Age
<37 weeks Among all Low Birthweight Infants* of
Hispanic and White non-Hispanic Mothers**
Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A6.10)

*Infants with birthweight <2,500 grams (<5.5 lbs.)

¹ Includes Colombian, Cuban, Mexican, "Other South American" and "Other Hispanic" mothers.

² Includes Salvadoran and "Other Central American" mothers.

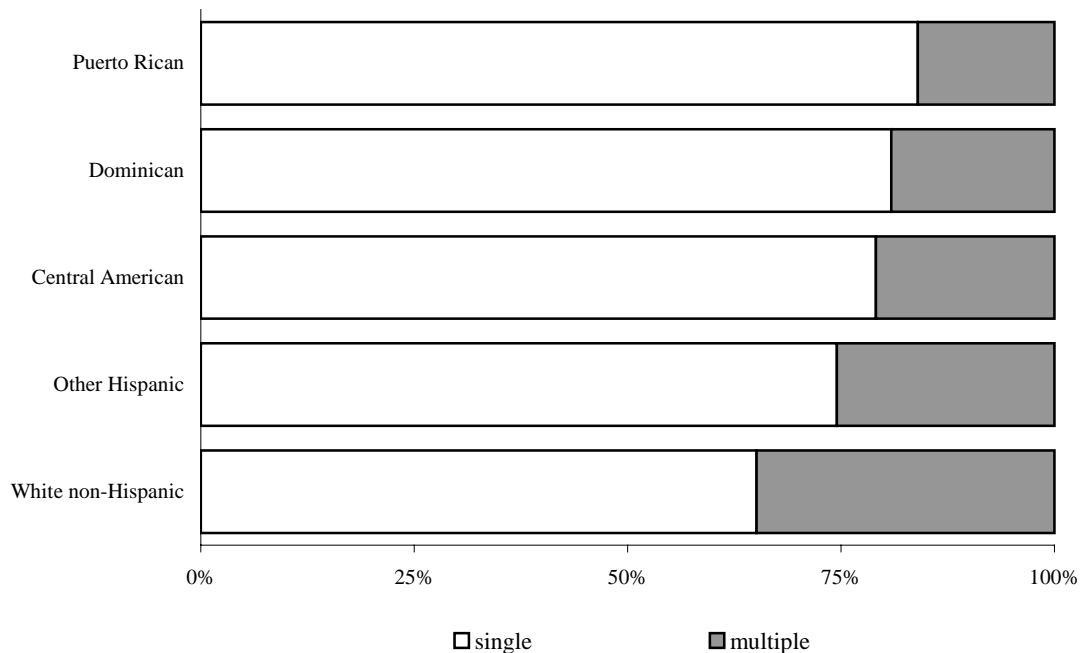
How is low birthweight related to plurality among Hispanic and White non-Hispanic women?

Multiple births (also called multiple plurality) is related to low birthweight. Each infant born as a twin, triplet, etc; will tend to be of lower birthweight than a singleton birth. When low birthweight is not the result of multiple plurality, the implications for prenatal interventions are different than when low birthweight results from multiple births.

During the years 1996 through 1999, the highest percentage of low birthweight infants that were multiple births was among White non-Hispanic mothers. More than 35% of low birthweight infants delivered by White non-Hispanic mothers were of multiple plurality. Multiple plurality occurred less frequently among low birthweight children delivered by Puerto Rican, Dominican, Central American, and “Other Hispanic” mothers (Figure 6.6).

Figure 6.6 Percent Plurality Distribution Among all Low Birthweight Infants* of Hispanic and White Non-Hispanic Mothers

Massachusetts: 1996-99



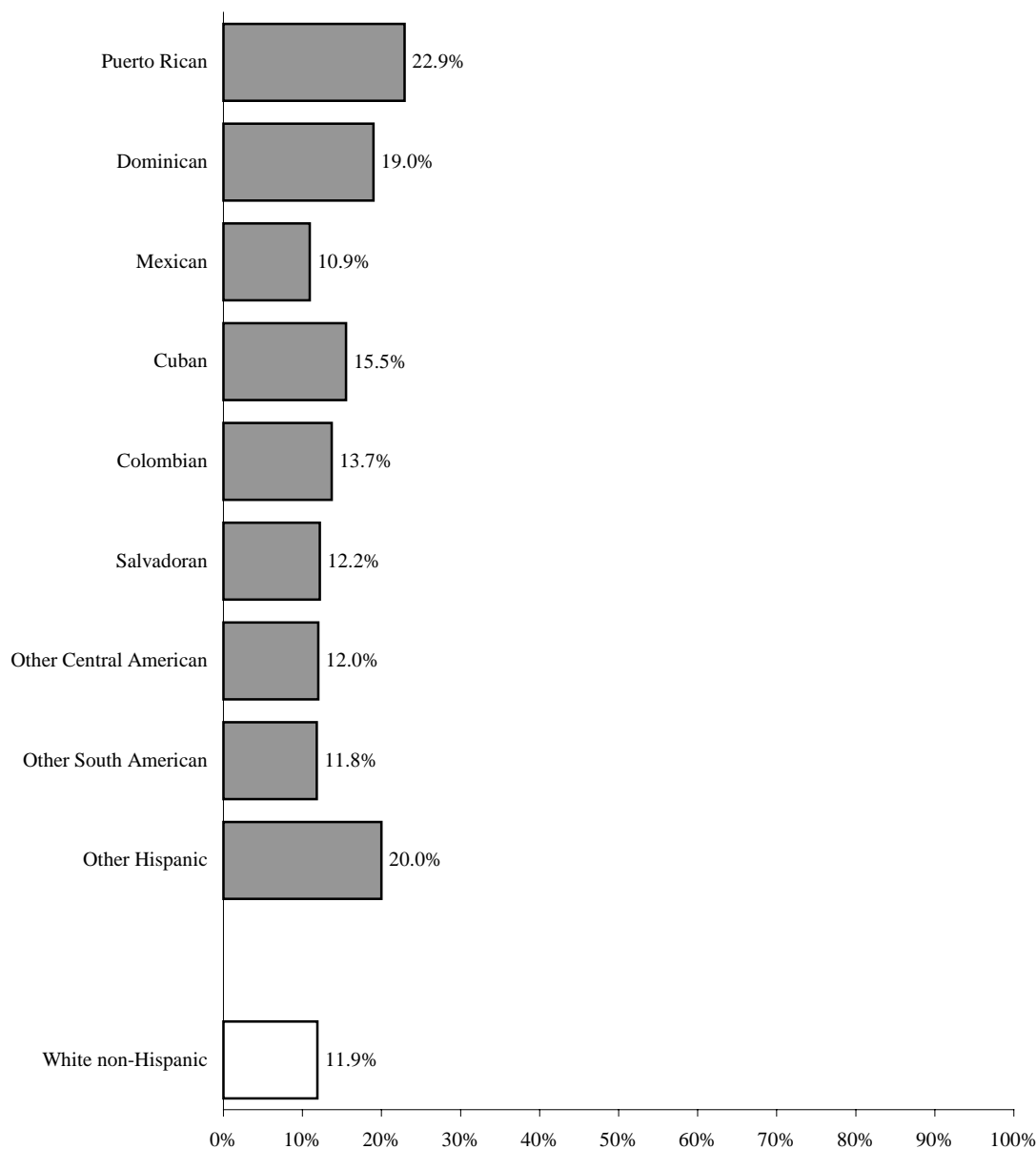
Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A6.10)

*Infants with birthweight <2,500 grams (<5.5 lbs.)

Did the proportion of abnormal conditions such as jaundice of the newborn vary among Hispanic groups? How do these proportions compare with White non-Hispanic infants?

Among infants of Hispanic women, 11%-23% had at least one abnormal condition recognized and recorded on the birth certificate, compared with 13% of infants born to White non-Hispanic women. Rates were lowest among Mexican mothers (11%) and highest among Puerto Rican (23%), “Other Hispanic” (20%), and Dominican mothers (19%) (Figure 6.7). Jaundice was most prevalent among “Other Hispanic” mothers (10%) as compared to 4% among White non-Hispanic mothers (Figure 6.8).

Figure 6.7 Percentage of Abnormal Conditions*
Among Infants of Hispanic and White non-Hispanic
Mothers by Ethnicity
 Massachusetts 1996-99

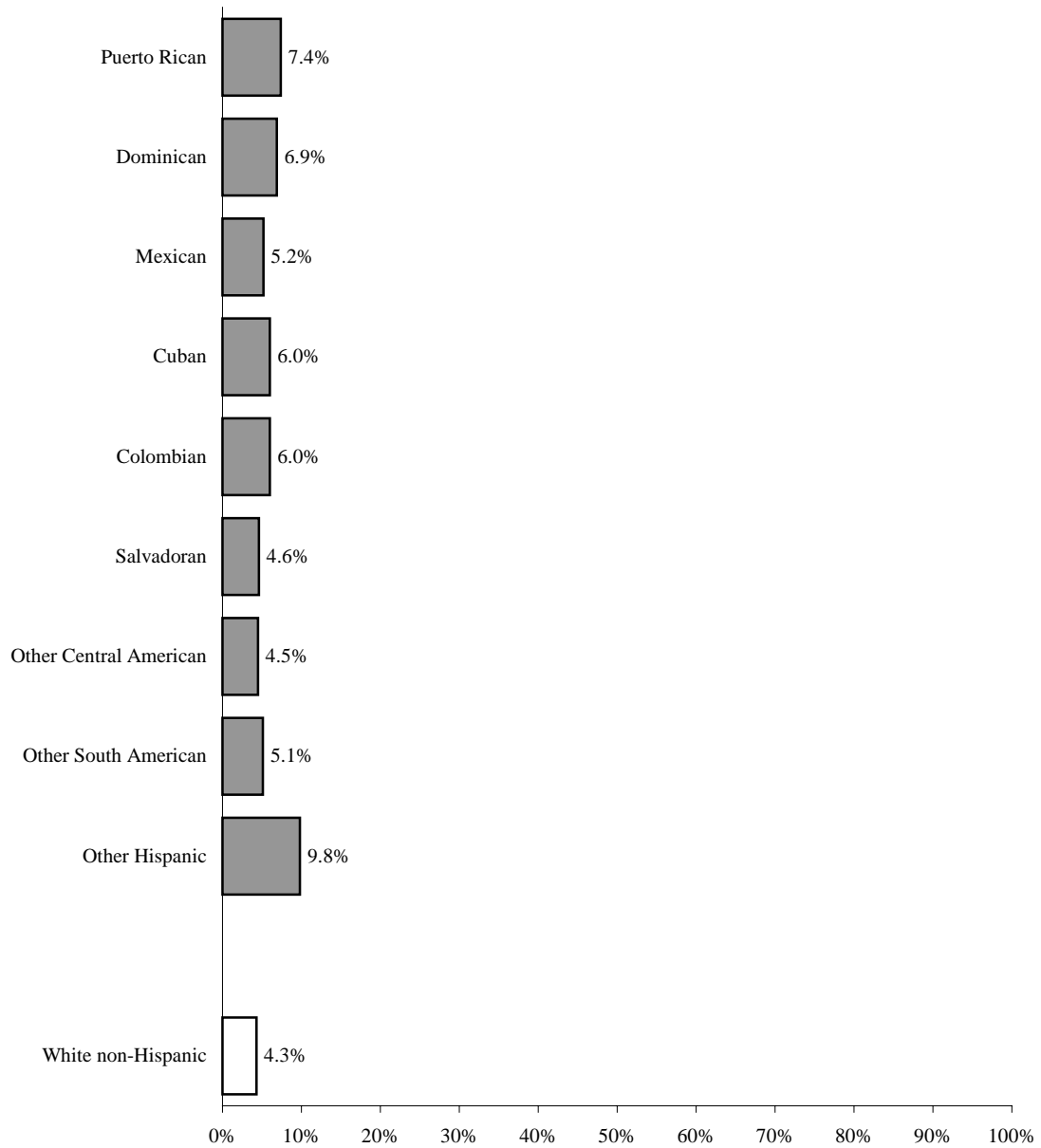


Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A6.2)

* Conditions indicated on a checklist on the birth certificate worksheet. See glossary for a definition of abnormal conditions.

Figure 6.8 Percentage of Jaundice* Among Infants of Hispanic and White non-Hispanic Mothers by Ethnicity

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A6.2)

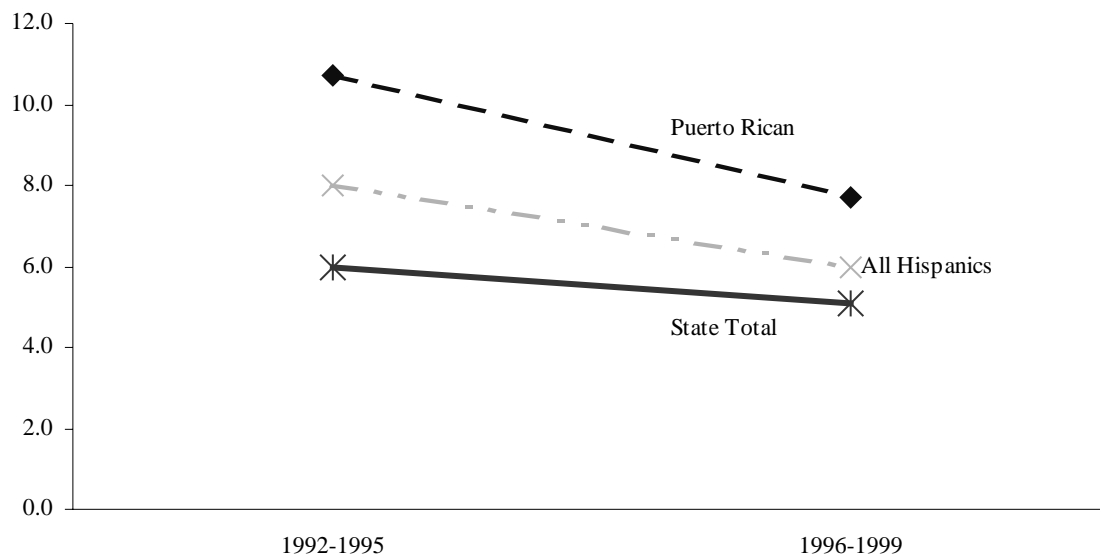
* See glossary for definition of jaundice.

Were there any changes in infant mortality rates over time for Hispanics between the periods of 1992-1995 and 1996-1999?

There was a substantial decline in infant mortality rates (IMR) among Hispanics in Massachusetts between 1992-1995 and 1996-1999. The IMR for Hispanics was 6.0 deaths per 1,000 live births in 1996-1999, a 25% decrease from the rate for 1992-1995 (Table A6.12). In comparison, the IMR for Massachusetts was 5.1 per 1,000 live births in 1996-1999, representing a 15% decrease from 6.0 per 1,000 in 1992-1995. The 1996-1999 IMR for Hispanics was 15% higher than the Massachusetts rate.

Puerto Rican mothers had the highest rates of infant mortality among Hispanics during both periods. The IMR for Puerto Rican mothers was 7.7 deaths per 1,000 live births in 1996-1999, a 28% decrease from the rate for the period 1992-1995.

Figure 6.9 Infant Mortality Rates by Ethnicity
Massachusetts: 1992-1995 and 1996-1999



Source: Massachusetts Department of Public Health, BHSR&E (See Appendix Table A6.12)

Chapter 7

Selected Perinatal Indicators by Birthplace and Language Preference for Hispanic Mothers in Massachusetts: 1996-1999

Are there any variations in perinatal indicators according to mother's ethnicity, with in different categories of birthplace and language preference?

Among Puerto Rican mothers, place of birth and language preference were related to maternal education, smoking during pregnancy and the percent of mothers whose prenatal care was paid by a public source. Non-continental U.S.-born mothers who preferred to speak English were the most likely to have completed high school. Mothers who were born in the continental U.S. and preferred English had the highest percentages of teen mothers (less than 20) (Figure 7.1) and mothers who smoked cigarettes during pregnancy. Non-continental U.S.-born mothers who preferred to speak Spanish had the highest percent of mothers paying for prenatal care through public funding (80%), with U.S.-born Spanish speakers close behind (77%).

Similar patterns were observed among Dominican mothers with 10.5 % of continental U.S.-born Dominican mothers who preferred to speak English reporting that they smoked during pregnancy compared to 4.9 % of continental U.S.-born mothers who preferred speaking Spanish. Among Dominican mothers who were born outside the continental United States, the percent reporting smoking during pregnancy was 1.8% for those preferring English and 2.2 % for mothers who preferred Spanish (Figure 7.2).

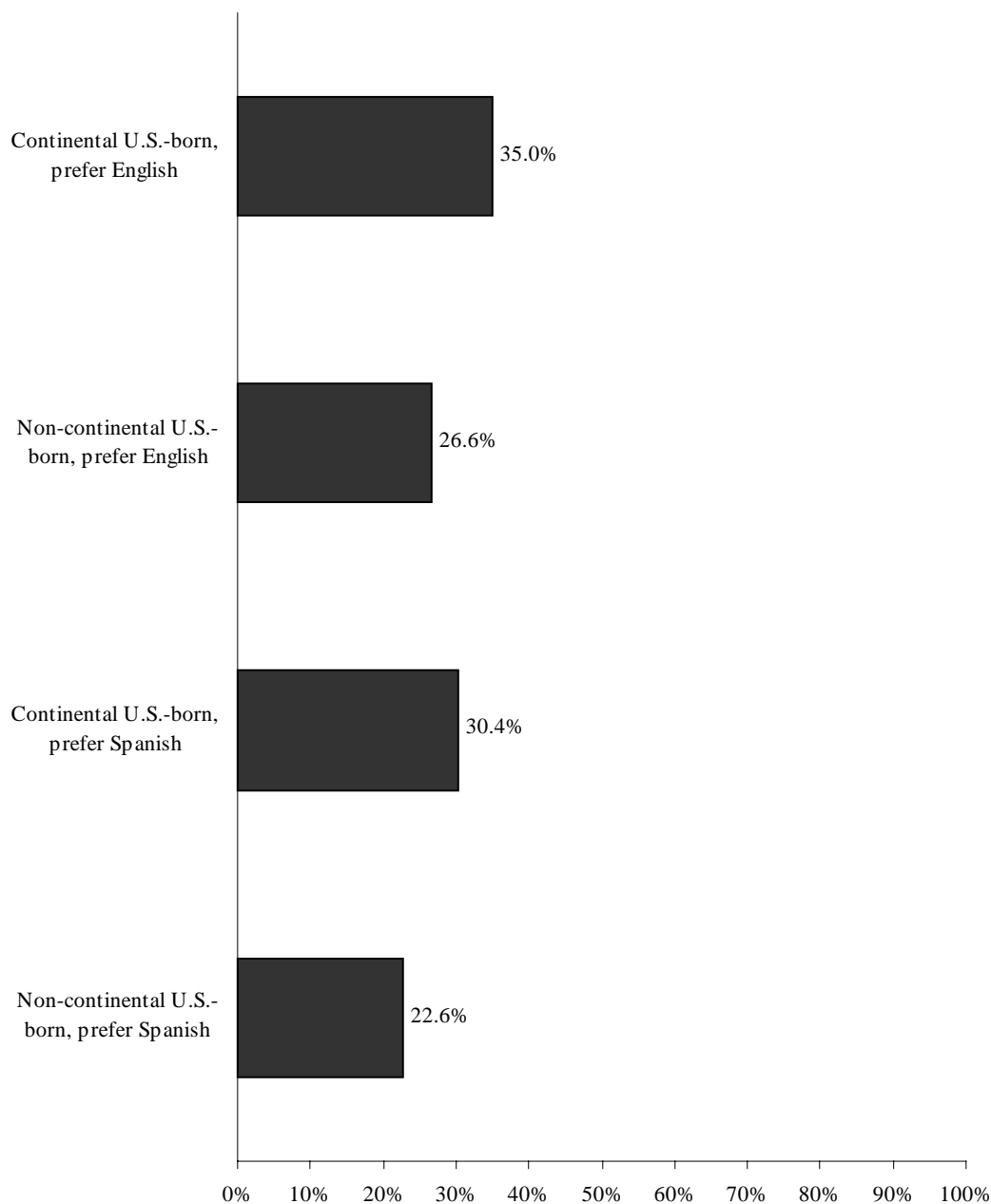
Central American mothers born outside of the continental U.S. who preferred to speak Spanish were half as likely to have completed high school and much more likely to use public sources for prenatal care than other Central American mothers (Table A7.1). Those born in the Continental U.S. were almost twice as likely to be teen mothers than Central American mothers of the same language preference category. Cigarette smoking during pregnancy was almost non-existent among Spanish-speaking mothers with less than 1% reporting that they used cigarettes during pregnancy. Central American mothers born in the Continental U.S. and who preferred to speak English were least likely to have their prenatal care paid with public funds (Figure 7.3), but were most likely to be teenagers (19.2%) and most likely to smoke cigarettes (8.2%).

As with Central Americans, the percent of South American mothers less than age 20 was highest among continental U.S.-born mothers who preferred to speak English (Figure 7.4). The percent of mothers who smoked cigarettes during pregnancy was also highest among continental U.S.-born mothers who preferred to speak English (Table A7.1). South American mothers who preferred to speak English (regardless of their place of birth) reported the lowest use of public sources for prenatal care among the various Hispanic groups included in this report (28.5%).

Among mothers categorized as "Other Hispanic" (including Cubans), continental U.S.-born mothers were more likely to be less than age 20 at delivery, to smoke cigarettes during pregnancy, and to have their prenatal care paid with public funds when compared to non-continental U.S.- born mothers.

In summary, regardless of ethnic group, mothers who were born in the continental United States and who preferred to speak English were generally more likely to have completed high school and less likely to use publicly funded prenatal services. However, these mothers were more likely to be less than age 20 at the time of delivery and more likely to report having smoked cigarettes during the current pregnancy. The perinatal indicators adequacy of prenatal care and low birth weight tended to show only modest variability by, place of birth and language preference within the different Hispanic ethnicity groups.

**Figure 7.1 Percentage of Mothers Less than 20 Years Old
Among Puerto Rican Mothers by Birthplace
and Language Preference**
Massachusetts 1996-99

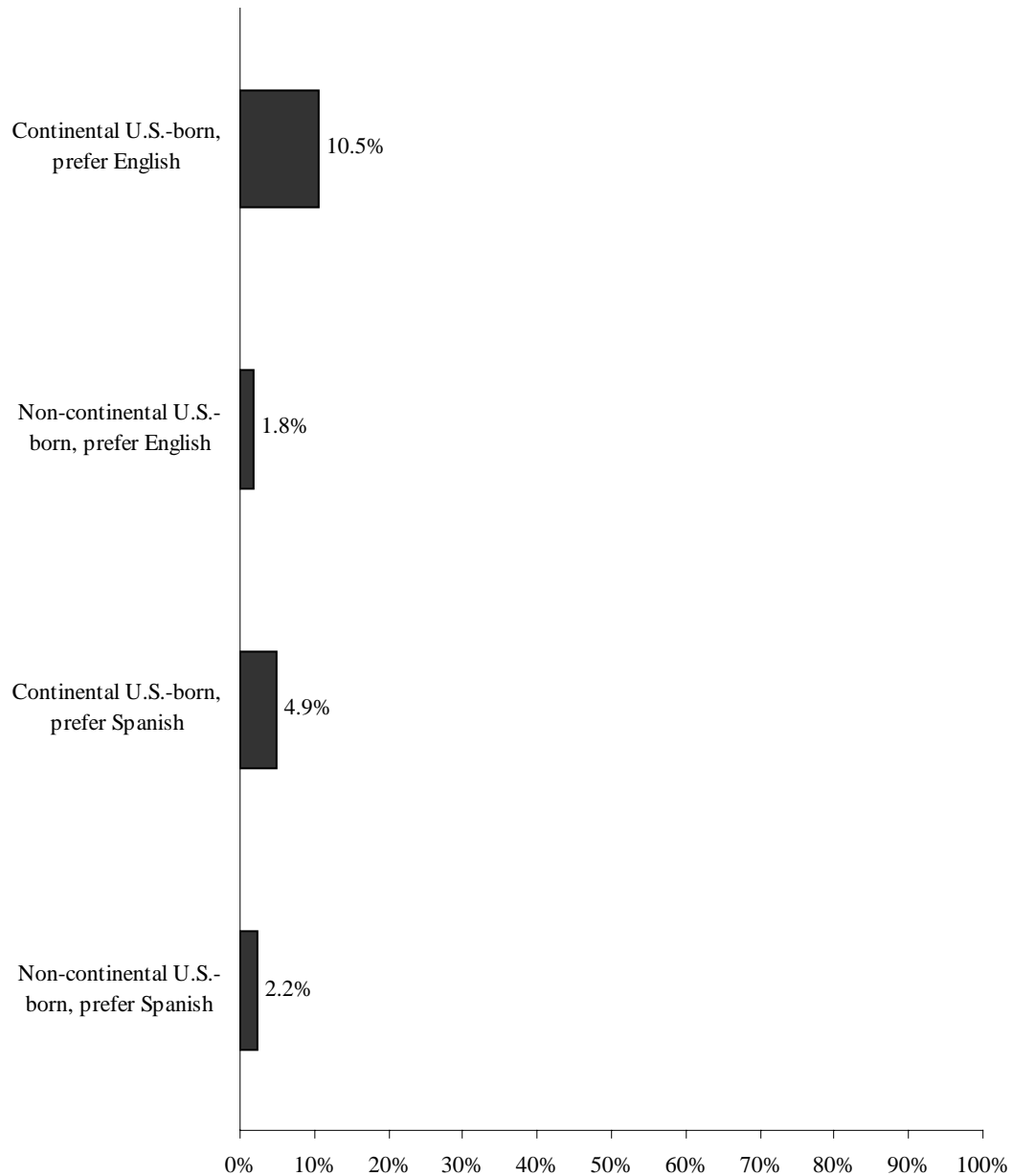


Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A7.1)

Note: Non-continental U.S.-born includes mothers born in Puerto Rico, the Virgin Islands, Guam and all other countries.

Figure 7.2 Percentage of Smoking During Pregnancy Among Dominican Mothers by Birthplace and Language Preference

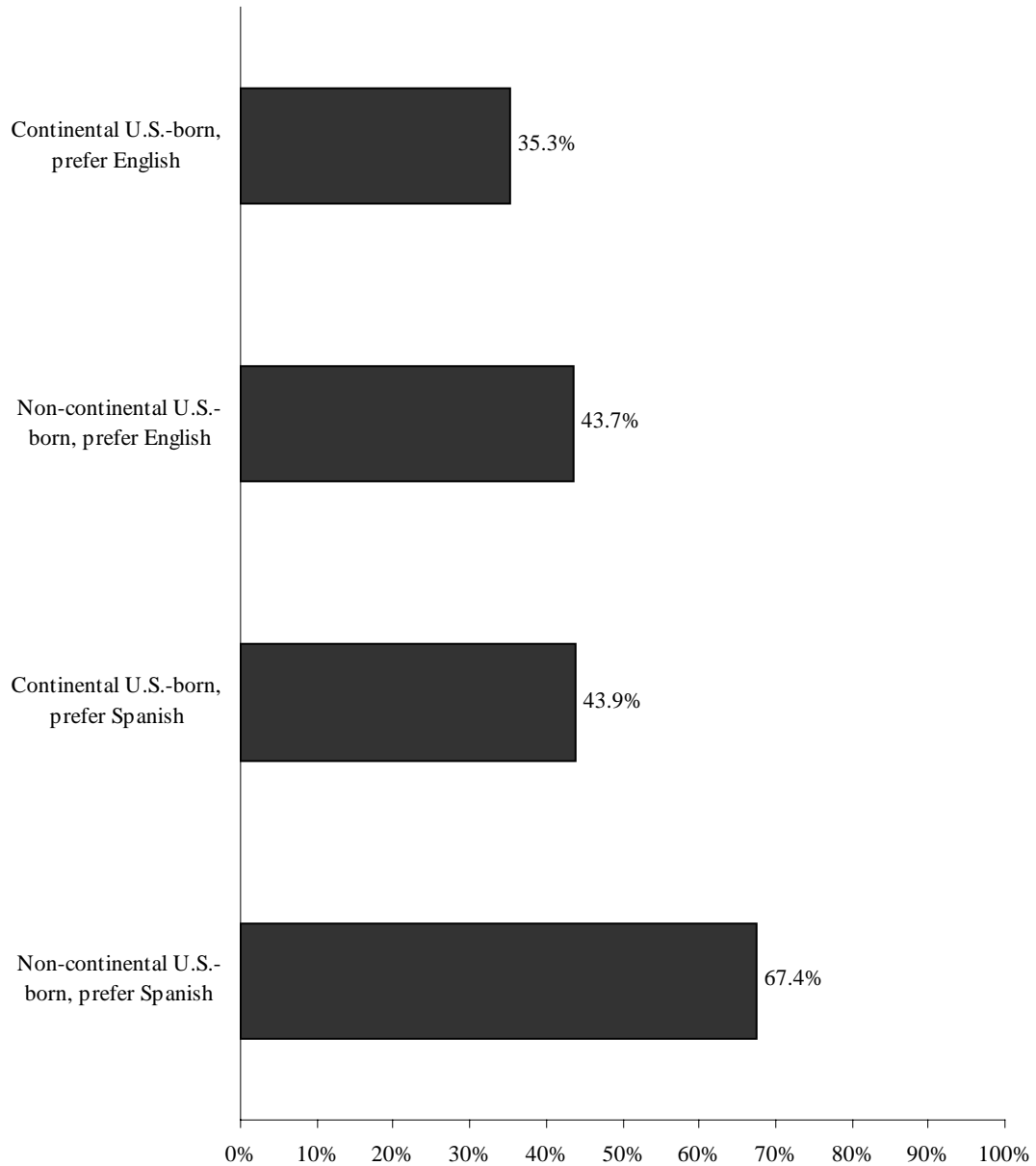
Massachusetts 1996-99



Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A7.1)

Note: Non-continental U.S.-born includes mothers born in Puerto Rico, the Virgin Islands, Guam and all other countries.

Figure 7.3 Percentage of Prenatal Care Paid by Public Source Among Central American* Mothers by Birthplace and Language Preference
Massachusetts 1996-99



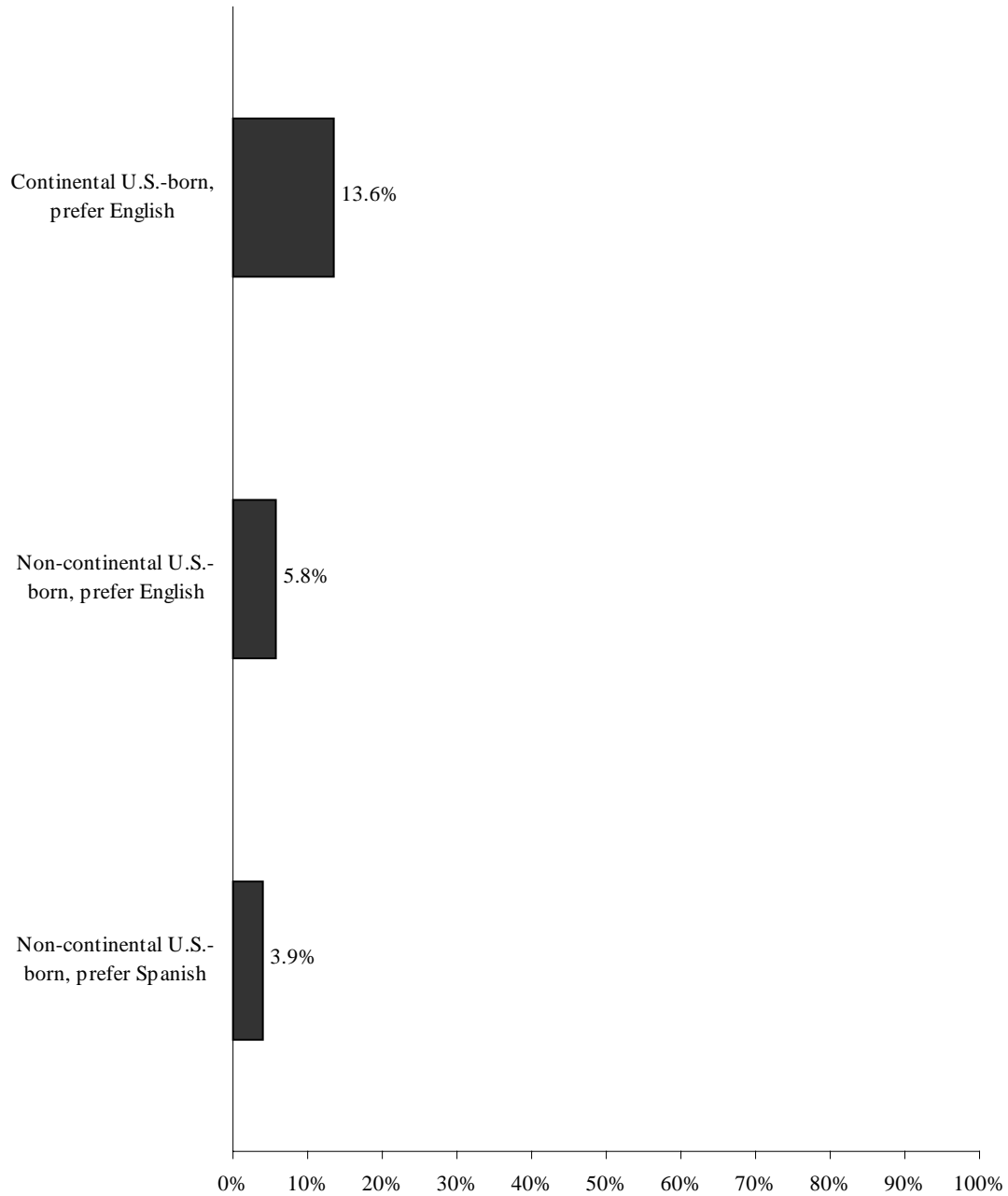
Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A7.1)

Note: Non-continental U.S.-born includes mothers born in Puerto Rico, the Virgin Islands, Guam and all other countries.

* Includes mothers identifying their ethnicity as “Mexican”, “Salvadoran”, or “Other Central American”.

**Figure 7.4 Percentage of Mothers Less than 20 Years Old
Among South American* Mothers by Birthplace
and Language Preference**

Massachusetts 1996-99



Source: Massachusetts Department of Public Health, (BHSR&E) (See Appendix Table A7.1)

Note: Non-continental U.S.-born includes mothers born in Puerto Rico, the Virgin Islands, Guam and all other countries.

* Includes mothers identifying their ethnicity as “Colombian” or “Other South American”.

APPENDIX I

DETAILED TABLES

FOR CHAPTERS 1-7

Table A1.1 Hispanic Populations in Selected Communities¹: Massachusetts 2000

	Total Hispanic	Cuban	Mexican	Puerto Rican	Dominican Republic	Salvadoran	Other Central American	Colombian	Other South American	Other Hispanic
Massachusetts	428,729	8,867	22,288	199,207	49,913	15,900	22,417	12,788	15,248	82,101
Boston	85,089	2,221	4,126	27,442	12,981	5,333	6,199	4,065	2,939	19,783
Lawrence	43,019	408	316	15,816	16,186	53	948	198	527	8,567
Springfield	41,343	232	630	35,251	614	66	315	173	245	3,817
Worcester	26,155	399	706	17,091	1,611	1,000	407	383	753	3,805
Chelsea	16,984	227	660	5,363	533	2,711	3,299	658	247	3,286
Holyoke	16,485	58	85	14,539	168	13	44	190	44	1,344
Lynn	16,383	148	853	3,769	5,517	269	1,694	144	172	3,817
Lowell	14,734	121	282	9,604	1,024	47	182	1,167	169	2,138
New Bedford	9,576	59	322	6,657	430	128	403	45	56	1,476
Brockton	7,552	152	404	4,545	403	109	372	86	284	1,197
Cambridge	7,455	270	1,175	1,637	424	567	361	378	873	1,770
Framingham	7,265	110	345	2,903	402	518	611	265	291	1,820
Somerville	6,786	173	464	776	173	2,075	561	219	379	1,966
Fitchburg	5,852	28	391	4,199	288	4	65	29	249	599
Haverhill	5,174	84	340	2,242	1,179	36	153	56	58	1,026
Waltham	5,031	95	609	1,360	86	113	1,054	110	499	1,105
Chicopee	4,790	32	93	3,932	97	4	22	39	40	531
Leominster	4,544	34	246	2,843	190	19	89	79	407	637
Salem	4,541	44	131	759	2,176	18	145	23	58	1,187
Revere	4,465	74	473	802	127	440	313	622	235	1,379
Methuen	4,221	73	70	1,691	1,308	24	92	28	87	848
Everett	3,617	50	186	542	79	888	313	290	173	1,096
Southbridge	3,472	26	62	3,033	56	5	9	6	23	252
Fall River	3,040	38	179	1,946	112	3	65	25	64	608
Malden	2,696	83	172	486	65	178	151	285	295	981
Taunton	2,198	30	86	1,518	72	8	50	28	32	374
Marlborough	2,196	25	372	567	68	44	458	67	101	494
Amherst	2,159	92	189	983	97	90	99	83	148	378
Newton	2,111	167	305	334	79	31	153	161	387	494
Brookline	2,018	115	361	309	51	34	118	162	390	478
Westfield	2,008	11	58	1,671	7	4	12	14	20	211

Source: US Census Bureau

¹ Communities with at least 2,000 Hispanic residents are included in this table.

Table A1.1.b Percent Distribution of Hispanic Populations in Selected Communities¹: Massachusetts 2000

	Hispanic Population	Cuban	Mexican	Puerto Rican	Dominican Republic	Salvadoran	Other Central American	Colombian	Other South American	Other Hispanic
Massachusetts	100	2.1	5.2	46.5	11.6	3.7	5.2	3.0	3.6	19.1
Boston	100	2.6	4.8	32.3	15.3	6.3	7.3	4.8	3.5	23.2
Lawrence	100	0.9	0.7	36.8	37.6	0.1	2.2	0.5	1.2	19.9
Springfield	100	0.6	1.5	85.3	1.5	0.2	0.8	0.4	0.6	9.2
Worcester	100	1.5	2.7	65.3	6.2	3.8	1.6	1.5	2.9	14.5
Chelsea	100	1.3	3.9	31.6	3.1	16.0	19.4	3.9	1.5	19.3
Holyoke	100	0.4	0.5	88.2	1.0	0.1	0.3	1.2	0.3	8.2
Lynn	100	0.9	5.2	23.0	33.7	1.6	10.3	0.9	1.0	23.3
Lowell	100	0.8	1.9	65.2	6.9	0.3	1.2	7.9	1.1	14.5
New Bedford	100	0.6	3.4	69.5	4.5	1.3	4.2	0.5	0.6	15.4
Brockton	100	2.0	5.3	60.2	5.3	1.4	4.9	1.1	3.8	15.9
Cambridge	100	3.6	15.8	22.0	5.7	7.6	4.8	5.1	11.7	23.7
Framingham	100	1.5	4.7	40.0	5.5	7.1	8.4	3.6	4.0	25.1
Somerville	100	2.5	6.8	11.4	2.5	30.6	8.3	3.2	5.6	29.0
Fitchburg	100	0.5	6.7	71.8	4.9	0.1	1.1	0.5	4.3	10.2
Haverhill	100	1.6	6.6	43.3	22.8	0.7	3.0	1.1	1.1	19.8
Waltham	100	1.9	12.1	27.0	1.7	2.2	21.0	2.2	9.9	22.0
Chicopee	100	0.7	1.9	82.1	2.0	0.1	0.5	0.8	0.8	11.1
Leominster	100	0.7	5.4	62.6	4.2	0.4	2.0	1.7	9.0	14.0
Salem	100	1.0	2.9	16.7	47.9	0.4	3.2	0.5	1.3	26.1
Revere	100	1.7	10.6	18.0	2.8	9.9	7.0	13.9	5.3	30.9
Methuen	100	1.7	1.7	40.1	31.0	0.6	2.2	0.7	2.1	20.1
Everett	100	1.4	5.1	15.0	2.2	24.6	8.7	8.0	4.8	30.3
Southbridge	100	0.7	1.8	87.4	1.6	0.1	0.3	0.2	0.7	7.3
Fall River	100	1.3	5.9	64.0	3.7	0.1	2.1	0.8	2.1	20.0
Malden	100	3.1	6.4	18.0	2.4	6.6	5.6	10.6	10.9	36.4
Taunton	100	1.4	3.9	69.1	3.3	0.4	2.3	1.3	1.5	17.0
Marlborough	100	1.1	16.9	25.8	3.1	2.0	20.9	3.1	4.6	22.5
Amherst	100	4.3	8.8	45.5	4.5	4.2	4.6	3.8	6.9	17.5
Newton	100	7.9	14.4	15.8	3.7	1.5	7.2	7.6	18.3	23.4
Brookline	100	5.7	17.9	15.3	2.5	1.7	5.8	8.0	19.3	23.7
Westfield	100	0.5	2.9	83.2	0.3	0.2	0.6	0.7	1.0	10.5

Source: US Census Bureau

¹ Communities with at least 2,000 Hispanic residents are included in this table.

Table A1.1.c Hispanic Populations in Selected Communities¹: Massachusetts 2000

	Total	Ethnicity	
		Hispanic Number	Hispanic Percent
Massachusetts	6,349,097	428,729	6.8
Boston city	589,141	85,089	14.4
Lawrence city	72,043	43,019	59.7
Springfield city	152,082	41,343	27.2
Worcester city	172,648	26,155	15.1
Chelsea city	35,080	16,984	48.4
Holyoke city	39,838	16,485	41.4
Lynn city	89,050	16,383	18.4
Lowell city	105,167	14,734	14.0
New Bedford city	93,768	9,576	10.2
Brockton city	94,304	7,552	8.0
Cambridge city	101,355	7,455	7.4
Framingham town	66,910	7,265	10.9
Somerville city	77,478	6,786	8.8
Fitchburg city	39,102	5,852	15.0
Haverhill city	58,969	5,174	8.8
Waltham city	59,226	5,031	8.5
Chicopee city	54,653	4,790	8.8
Leominster city	41,303	4,544	11.0
Salem city	40,407	4,541	11.2
Revere city	47,283	4,465	9.4
Methuen city	43,789	4,221	9.6
Everett city	38,037	3,617	9.5
Southbridge town	17,214	3,472	20.2
Fall River city	91,938	3,040	3.3
Malden city	56,340	2,696	4.8
Taunton city	55,976	2,198	3.9
Marlborough city	36,255	2,196	6.1
Amherst town	34,874	2,159	6.2
Newton city	83,829	2,111	2.5
Brookline town	57,107	2,018	3.5
Westfield city	40,072	2,008	5.0

Source: US Census Bureau.

¹ Communities with at least 2,000 Hispanic residents are included in this table.

Table A1.2 Percent Change in the Hispanic Population from 1990 to 2000 for Selected Communities¹: Massachusetts

Community	Total Hispanic Population 1990	Total Hispanic Population 2000	% Population change, 1990-2000
State	287,549	428,729	49.1 %
Boston	61,955	85,089	37.3
Lawrence	29,237	43,019	47.1
Springfield	26,528	41,343	55.8
Worcester	16,258	26,155	60.9
Chelsea	9,018	16,984	88.3
Holyoke	13,573	16,485	21.5
Lynn	7,432	16,383	120.4
Lowell	10,499	14,734	40.3
New Bedford	6,653	9,576	43.9
Brockton	5,860	7,552	28.9
Cambridge	6,506	7,455	14.6
Framingham	5,291	7,265	37.3
Somerville	4,784	6,786	41.8
Fitchburg	3,957	5,852	47.9
Haverhill	2,714	5,174	90.6
Waltham	3,239	5,031	55.3
Chicopee	2,050	4,790	133.7
Leominster	3,161	4,544	43.8
Salem	2,548	4,541	78.2
Revere	1,631	4,465	173.8
Methuen	2,070	4,221	103.9
Everett	1,371	3,617	163.8
Southbridge	2,278	3,472	52.4
Fall River	1,577	3,040	92.8
Malden	1,417	2,696	90.3
Taunton	2,362	2,198	-6.9
Marlborough	1,338	2,196	64.1
Amherst	1,669	2,159	29.4
Newton	1,638	2,111	28.9
Brookline	1,596	2,018	26.4
Westfield	1,564	2,008	28.4

Source: U.S. Bureau of the Census

¹Communities with at least 2,000 Hispanic residents in 2000 are included in this table.

Table A1.3 Percent Change in Hispanic Populations from 1990 to 2000 for Selected Communities¹: Massachusetts

Community	Mexican	Puerto Rican	Cuban	Other Hispanic	Total Hispanic	Total Population
State	+75.5	+31.8	+9.4	+71.7	+49.1	+5.5
Boston	89.4	6.5	-10.6	62.7	37.3	2.6
Lawrence	91.5	7.9	-11.9	89.8	47.1	2.6
Springfield	105.9	48.6	16.6	128.0	55.8	-3.1
Worcester	77.8	40.5	5.0	140.1	60.9	1.7
Chelsea	256.8	17.1	-9.2	168.2	88.3	22.2
Holyoke	1.2	14.6	-3.3	143.0	21.5	-8.8
Lynn	185.3	64.9	64.4	144.1	120.4	9.6
Lowell	84.3	24.2	21.0	88.0	40.3	1.7
New Bedford	96.3	36.9	51.3	60.0	43.9	-6.2
Brockton	36.9	46.4	-19.1	7.8	28.9	1.6
Cambridge	46.7	-12.7	6.3	22.3	14.6	5.8
Framingham	29.2	8.8	-23.1	76.5	37.3	3.0
Somerville	99.1	22.2	17.7	42.6	41.8	1.7
Fitchburg	93.6	35.5	3.7	96.5	47.9	-5.1
Haverhill	261.7	69.3	44.8	102.6	90.6	14.7
Waltham	198.5	-4.4	9.2	94.6	55.3	2.3
Chicopee	66.1	145.1	23.1	101.4	133.7	-3.5
Leominster	65.1	28.7	0.0	84.8	43.8	8.3
Salem	133.9	28.2	46.7	92.9	78.2	6.1
Revere	297.5	81.9	-11.9	215.7	173.8	10.5
Methuen	133.3	44.7	-8.8	201.8	103.9	9.5
Everett	151.4	79.5	47.1	195.4	163.8	6.5
Southbridge	100.0	44.1	188.9	163.9	52.4	-3.4
Fall River	65.7	287.6	192.3	-8.1	92.8	-0.8
Malden	39.8	101.7	36.1	97.1	90.3	4.6
Taunton	-4.4	14.8	114.3	-39.7	-6.9	12.3
Marlborough	95.8	35.6	0.0	74.8	64.1	14.0
Amherst	35.0	15.9	-8.9	54.3	29.4	-1.0
Newton	57.2	86.6	28.5	15.0	28.9	1.5
Brookline	111.1	9.2	10.6	18.8	26.4	4.4
Westfield	41.5	29.0	22.2	22.4	28.4	4.4

Source: U.S. Bureau of the Census.

¹Communities with at least 1,000 Hispanic residents in 1990 are included in this table.

Table A1.4 Age Distribution of the Hispanic Population: Massachusetts 1990

	Total Hispanic	Mexican	Puerto Rican	Cuban	Other Hispanic	Total State
Age, in years						
< 20	41.6	35.9	48.1	24.5	35.0	25.7
20-24	11.3	14.6	10.6	9.9	12.0	8.5
25-29	11.3	13.5	10.2	10.9	12.4	9.3
30-34	9.4	10.6	8.4	9.2	10.6	9.0
35+	26.4	25.3	22.8	45.5	30.0	47.4
Median age	23.7	24.8	20.9	32.3	26.1	33.5

Source: U.S. Bureau of the Census.

Table A1.5 Income, Poverty, and Unemployment Levels of the Hispanic Population: Massachusetts 1980 and 1990

	Mean household income		Percent of persons below poverty ¹		Percent of persons below 125% poverty ¹		Percent of persons unemployed ¹	
	<u>1980</u>	<u>1990</u>	<u>1980</u>	<u>1990</u>	<u>1980</u>	<u>1990</u>	<u>1980</u>	<u>1990</u>
Total Hispanic	\$13,136	\$26,292	37.6	36.7	45.5	43.2	9.6	15.2
Mexican	15,350	38,289	18.8	15.2	24.8	19.1	8.6	9.5
Puerto Rican	9,647	20,302	53.2	48.9	62.6	56.3	14.3	19.8
Cuban	19,996	41,739	11.6	14.9	17.9	20.4	4.7	7.9
Other Hispanic	16,372	31,343	20.8	24.3	27.0	30.0	6.7	12.8
Total State	20,744	45,472	9.6	8.9	13.8	12.0	5.0	6.7

Source: U.S. Bureau of the Census.

¹Economic data collected from the 1980 and 1990 census refer to income and employment status during the year prior to the census (1979 and 1989).

Table A2.1 Distribution of Hispanic Births by Community¹: Massachusetts 1996-1999

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	TOTAL
Boston	1,926	1,686	214	71	286	841	644	286	727	6,681
Lawrence	1,772	1,719	7	15	23	8	86	46	20	3,696
Springfield	3,223	47	26	5	15	9	37	24	33	3,419
Worcester	1,731	145	40	14	32	130	41	84	12	2,229
Holyoke	1,631	21	5	0	11	3	6	5	5	1,687
Chelsea	522	59	53	11	63	362	384	37	77	1,568
Lynn	395	728	59	4	15	33	243	25	27	1,529
Lowell	959	127	20	3	85	7	18	19	13	1,251
New Bedford	559	44	15	1	5	25	28	6	6	689
Somerville	66	13	25	8	17	389	63	53	28	662
Framingham	259	41	22	8	18	82	72	95	26	623
Brockton	407	56	18	11	6	10	41	48	20	617
Fitchburg	396	26	31	0	3	0	11	15	0	482
Waltham	136	3	48	0	7	14	162	42	22	434
Leominster	294	16	24	1	11	0	8	20	6	380
Haverhill	164	131	24	3	9	7	17	10	4	369
Cambridge	87	61	29	4	12	62	29	57	26	367
Chicopee	316	5	7	1	4	1	2	9	2	347
Salem	73	250	0	1	0	1	11	5	4	345
Methuen	159	143	2	4	5	1	15	10	1	340
Revere	51	24	47	5	57	43	51	31	17	326
Southbridge	266	8	2	0	2	1	2	2	1	284
Everett	35	8	7	3	40	126	27	24	9	279
Marlborough	56	9	62	1	7	10	65	32	15	257
Other towns	1,853	381	456	169	262	164	440	605	246	4,576
TOTAL	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	33,437

¹Cities and towns with 200 or more Hispanic births from 1996 -1999.

Table A2.2 Distribution of Hispanic Births by Hospital¹: Massachusetts 1996-1999

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	Total Hispanic Births	Total Births
Baystate Medical Center	4,112	69	48	9	39	17	51	51	45	4,441	19,883
Brigham and Women's Hospital	1,183	1,384	104	65	142	161	307	269	776	4,391	35,848
Lawrence General Hospital	1,435	1,391	8	15	17	11	77	38	12	3,004	5,203
Massachusetts General Hospital	590	138	148	21	168	631	469	128	51	2,344	8,915
UMASS Memorial Medical Center	1,363	129	75	12	29	70	55	99	13	1,845	15,652
Boston Medical Center	402	200	74	9	89	357	133	23	50	1,337	6,591
North Shore Medical Center	242	708	28	3	8	13	94	36	17	1,149	6,895
Lowell General Hospital	841	128	18	4	83	6	21	20	5	1,126	8,296
Beth Israel Deaconess Medical Center	349	122	59	35	61	70	76	103	182	1,057	20,197
Holy Family Hospital and Medical Center	435	448	7	1	10	1	16	20	6	944	3,442
Leominster Hospital	674	49	70	6	11	1	21	44	9	885	5,961
Saint Vincent Hospital	599	54	28	16	18	65	36	51	6	873	7,937
Metrowest Medical Center	320	48	71	9	26	92	121	117	23	827	9,969
Beverly Hospital	214	346	50	5	12	15	157	15	7	821	10,390
Mercy Hospital	699	8	3	0	12	0	7	4	0	733	2,216
St. Elizabeth's Medical Center	106	46	48	14	65	102	268	62	9	720	6,445
St. Luke's Hospital	562	43	18	2	5	24	27	4	4	689	6,278
Cambridge Hospital	70	33	20	3	15	447	73	25	2	688	2,565
New England Medical Center	312	102	16	5	15	38	83	28	14	613	6,123
Holyoke Hospital	455	3	2	0	4	2	1	5	1	473	1,684
Caritas Good Samaritan Medical Center	205	28	8	10	6	5	16	35	4	317	4,952
Brockton Hospital	210	25	12	3	2	2	18	35	7	314	4,342
Mount Auburn Hospital	63	19	25	11	16	42	55	40	12	283	4,748

(continued on next page)

Table A2.2 (continued) Distribution of Hispanic Births by Hospital¹: Massachusetts 1996-1999

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	Total Hispanic Births	Total Births
Harrington Memorial Hospital	260	7	2	0	0	1	4	4	0	278	1,680
Hale / Haverhill Hospital and Medical Center	125	89	24	3	4	3	13	5	0	266	1,663
Newton-Wellesley Hospital	59	3	22	22	21	6	29	64	11	237	15,892
Deaconess/Waltham Hospital	113	0	18	1	1	8	57	23	5	226	1,244
Melrose-Wakefield Hospital	72	8	23	5	23	30	19	26	6	212	6,302
Providence Hospital	197	1	1	1	2	0	1	0	0	203	610
Cooley-Dickinson Hospital	131	4	13	1	6	21	7	10	1	194	3,658
Saints Memorial Medical Center	127	19	3	1	13	2	1	10	1	177	2,066
Morton Hospital	145	6	5	0	0	6	1	3	6	172	2,763
Sturdy Memorial Hospital	47	7	8	1	5	8	64	5	7	152	3,198
Winchester Hospital	57	12	14	8	8	3	12	24	3	141	8,542
South Shore Hospital	40	3	21	3	9	2	19	31	8	136	13,652
Charlton Memorial Hospital	100	4	14	1	1	1	5	3	6	135	5,913
Cape Cod Hospital	32	10	22	8	1	7	7	24	4	115	4,034
Emerson Hospital	30	1	18	5	6	2	9	14	2	87	5,780
Milford-Whitinsville Regional Hospital	37	8	5	2	3	0	3	7	2	67	2,145
Malden Hospital	33	2	3	3	3	9	4	4	4	65	971
Boston Regional Medical Center	15	1	7	2	5	5	11	14	3	63	3,702
Other hospitals	275	45	80	18	31	43	55	67	23	637	34,417
TOTAL	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	33,437	322,764

¹ Hospitals with 60 or more Hispanic births from 1996 - 1999.

Table A2.3 Distribution of Mother's Birthplace for "Other Hispanic Groups": Massachusetts: 1996-1999

Mother's birthplace	Mother's ethnicity							
	Other Central American		Other South American		Other Hispanic		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Guatemala	1,272	50.8	45	2.8	100	7.4	1,417	26.0
Honduras	555	22.2	16	1.0	44	3.3	615	11.3
Brazil	15	0.6	320	20.1	23	1.7	358	6.6
Peru	23	0.9	240	15.1	17	1.3	280	5.1
Venezuela	24	1.0	168	10.6	22	1.6	214	3.9
Ecuador	38	1.5	162	10.2	12	0.9	212	3.9
Argentina	8	0.3	130	8.2	10	0.7	148	2.7
Chile / Eastern Island	10	0.4	119	7.5	13	1.0	142	2.6
Costa Rica	109	4.4	2	0.1	10	0.7	121	2.2
Panama	85	3.4	6	0.4	11	0.8	102	1.9
Nicaragua	59	2.4	3	0.2	2	0.1	64	1.2
Guyana	2	0.1	60	3.8	1	0.1	63	1.2
Bolivia	6	0.2	51	3.2	4	0.3	61	1.1
El Salvador	27	1.1	9	0.6	21	1.6	57	1.0
Uruguay	1	0.0	32	2.0	3	0.2	36	0.7
Colombia	3	0.1	17	1.1	8	0.6	28	0.5
Spain/ Canary Islands/ Balearic Island	0	0.0	4	0.3	20	1.5	24	0.4
Portugal/ Madeira Island/ Azores	2	0.1	4	0.3	15	1.1	21	0.4
Dominican Republic	2	0.1	1	0.1	10	0.7	13	0.2
Mexico	2	0.1	2	0.1	7	0.5	11	0.2
Guam	1	0.0	0	0.0	0	0.0	1	0.0
Puerto Rico & U.S. Territories	5	0.2	3	0.2	17	1.3	25	0.5
Other countries	39	1.6	29	1.8	35	2.6	103	1.9
Continental U.S.-born	211	8.4	161	10.1	940	69.8	1,312	24.1
Total births	2,503	100	1,590	100	1,347	100	5,440	100

Table A3.1 Percent Distribution of Mother's Demographic Characteristics by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	White Non- Hispanic
Number of births	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	240,434
Mother's birthplace										
United States	47.9	11.8	33.3	51.3	8.5	2.1	8.4	10.2	69.9	92.7
Puerto Rico & U.S. Territories	50.8	0.7	0.0	1.5	-- ¹	0.0	0.2	-- ¹	1.3	0.1
Non - U.S. ²	1.3	87.5	66.7	47.2	91.3	97.9	91.4	89.6	28.8	7.3
Age, in years										
<18	13.4	5.5	3.3	2.6	1.6	3.8	3.8	1.8	8.2	1.4
18-19	15.9	9.3	6.1	5.8	3.9	8.1	6.7	3.6	13.1	3.2
20-24	34.4	28.2	25.7	14.3	18.1	32.8	27.6	15.9	27.3	11.6
25-29	20.3	27.9	30.5	20.7	25.1	29.3	29.4	30.1	26.2	25.8
30-34	11.1	19.7	22.8	37.3	31.2	19.5	20.4	27.9	16.3	36.1
35-39	4.1	8.0	9.4	16.9	17.2	5.5	10.3	17.7	7.5	18.4
40+	0.7	1.5	2.3	2.3	2.9	1.1	2.0	2.9	1.4	3.5
Education completed ³										
less than high school	32.8	26.3	27.3	11.5	18.3	62.4	40.8	10.0	21.9	3.9
high school	38.9	40.8	28.9	20.4	34.4	24.9	32.0	30.9	34.2	24.7
some college	22.1	23.2	20.5	24.8	23.0	9.1	16.5	26.5	26.6	28.1
college graduate	4.3	7.5	15.2	27.7	17.2	3.2	7.7	20.5	9.7	29.9
more than college	1.9	2.2	8.0	15.6	7.0	0.4	3.1	12.1	7.7	13.4
Marital status										
married	28.4	41.3	68.3	72.0	69.2	43.2	50.4	77.2	43.2	81.6
not married	71.6	58.7	31.7	28.0	30.8	56.8	49.6	22.8	56.8	18.4
Race										
White	9.3	2.3	24.6	37.4	17.5	10.7	11.3	34.4	11.4	100.0
Black	0.6	1.8	-- ¹	5.3	-- ¹	0.2	4.0	3.8	1.6	0.0
Asian or American Indian	0.2	0.1	1.3	-- ¹	0.6	-- ¹	0.2	1.3	1.0	0.0
Other	90.0	95.8	73.9	56.1	81.8	89.0	84.5	60.5	86.0	0.0
Language preference										
English	70.4	32.7	51.0	85.5	38.0	16.9	31.0	53.6	55.3	98.2
Spanish	29.1	66.7	47.4	13.6	61.1	82.4	67.9	34.3	40.9	0.1
Portuguese	0.0	-- ¹	0.0	0.0	0.0	-- ¹	0.4	11.3	1.4	0.7
Other	0.5	0.5	1.5	-- ¹	0.9	0.6	0.7	0.8	2.3	1.0

¹ Percentages based on fewer than five events are excluded.² Outside of the United States, Puerto Rico, and U.S. Territories.³ Women 20 years of age and older.

Note: Percentages may not add to 100% due to missing values. Percentages are calculated based only on those births with known values for the characteristic of interest.

Table A3.2 Distribution of Mother's Demographic Characteristics by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	White Non- Hispanic
Number of births	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	240,434
Mother's birthplace										
United States	8,307	678	412	176	84	48	211	161	940	222,529
Puerto Rico & U.S. Territories	8,801	39	0	5	2	0	5	3	17	126
Non - U.S. ¹	225	5,029	824	162	900	2,276	2,283	1,420	388	17,511
Age, in years										
<18	2,331	316	41	9	16	88	94	29	111	3,458
18-19	2,757	535	76	20	39	188	167	57	176	7,812
20-24	5,971	1,620	319	49	180	764	691	253	368	27,908
25-29	3,516	1,603	379	71	250	682	735	479	353	62,128
30-34	1,919	1,131	283	128	310	454	510	444	219	86,706
35-39	714	461	117	58	171	127	257	282	101	44,127
40+	128	85	28	8	29	26	49	46	19	8,295
Education completed ²										
less than high school	4,008	1,286	307	36	172	1,271	908	150	231	9,037
high school	4,753	1,991	325	64	323	507	713	464	360	56,469
some college	2,703	1,133	230	78	216	185	367	397	280	64,415
college graduate	528	367	171	87	161	66	172	308	102	68,457
more than college	233	106	90	49	66	9	68	181	81	30,610
Marital status										
married	4,917	2,372	848	247	689	1,005	1,261	1,227	582	196,205
not married	12,415	3,378	394	96	306	1,324	1,242	363	764	44,196
Race										
White	1,610	130	306	128	174	248	282	547	154	240,434
Black	97	102	2	18	1	5	101	61	21	0
Asian or American Indian	31	8	16	4	6	2	6	20	13	0
Other	15,592	5,510	919	192	814	2,070	2,113	962	1,158	0
Language preference										
English	12,169	1,869	633	288	374	392	775	850	738	235,211
Spanish	5,025	3,809	588	46	601	1,909	1,698	545	546	216
Portuguese	8	4	0	0	0	1	9	180	19	1,754
Other	86	31	19	3	9	14	18	12	31	2,278

¹ Outside of the United States, Puerto Rico, and U.S. Territories.² Women 20 years of age and older.

Note: Total numbers for individual characteristics may not equal totals for a particular ethnic group due to missing values.

Table A4.1 Percent Distribution of Maternal Risk Factors by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	White Non- Hispanic
Number of births	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	240,434
Parity										
1	38.9	39.9	42.5	41.1	46.9	40.4	41.2	47.3	44.7	44.5
2-3	47.3	50.7	48.4	49.9	48.0	46.4	47.7	46.2	46.1	49.4
4+	13.8	9.4	9.2	9.0	5.0	13.2	11.1	6.5	9.2	6.2
Smoking prior to pregnancy										
yes	20.9	5.5	9.0	14.9	7.8	1.3	4.4	9.3	11.4	21.8
no	79.1	94.5	91.0	85.1	92.2	98.7	95.6	90.7	88.6	78.2
Smoking during pregnancy										
yes	14.1	2.9	3.7	8.8	2.2	0.6	2.1	3.4	6.8	13.2
no	85.9	97.1	96.3	91.2	97.8	99.4	97.9	96.6	93.2	86.8
Cesarean section ²										
yes	17.1	21.5	19.0	22.4	22.5	14.8	18.0	23.5	18.4	21.2
no	82.9	78.5	81.0	77.6	77.5	85.2	82.0	76.5	81.6	78.8
Maternal conditions										
anemia	5.3	4.1	3.6	4.7	2.2	4.4	3.2	2.3	4.7	1.3
hypertension ³	2.9	3.9	3.7	5.6	2.8	2.8	3.6	3.2	5.7	3.9
diabetes ⁴	3.9	3.4	3.9	2.4	3.1	3.2	4.3	3.0	4.4	2.8
hepatitis B carrier	0.1	0.4	-- ¹	-- ¹	-- ¹	-- ¹	-- ¹	-- ¹	-- ¹	0.1
eclampsia	1.1	1.9	1.2	2.1	1.4	0.7	1.2	1.1	3.1	0.8
Previous preterm or small for gestational age infant										
yes	1.9	2.0	0.6	1.5	0.9	0.9	1.1	0.7	1.8	0.8
no	98.1	98.0	99.4	98.5	99.1	99.1	98.9	99.3	98.2	99.2

¹ Percentages based on fewer than five events are excluded.

² Includes both primary and repeat Cesarean sections. Excludes those with unknown mode of delivery.

³ Includes both chronic and pregnancy-related hypertension.

⁴ Includes both gestational and other diabetes.

Note: Percentages may not add to 100% due to missing values. Percentages are calculated based only on those births with known values for the characteristic of interest.

Table A4.2 Distribution of Maternal Risk Factors by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	White Non- Hispanic
Number of births	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	240,434
Parity										
1	6,740	2,296	528	141	467	942	1,031	752	602	106,886
2-3	8,201	2,915	601	171	478	1,080	1,193	735	621	118,696
4+	2,395	540	114	31	50	307	279	103	124	14,852
Smoking prior to pregnancy										
yes	3,602	311	112	50	77	29	109	148	152	52,065
no	13,668	5,394	1,127	286	907	2,282	2,389	1,438	1,179	187,112
Smoking during pregnancy										
yes	2,449	168	46	30	22	13	52	54	92	31,791
no	14,864	5,572	1,195	312	972	2,307	2,444	1,533	1,253	208,317
Cesarean section ¹										
yes	2,957	1,230	236	76	224	343	449	373	247	50,862
no	14,334	4,504	1,006	264	770	1,976	2,048	1,214	1,095	189,078
Maternal conditions										
anemia	918	236	45	16	22	102	80	37	63	3,084
hypertension ²	495	221	46	19	28	66	89	51	77	9,197
diabetes ³	667	197	48	8	31	74	107	48	59	6,742
hepatitis B carrier	25	22	1	2	1	4	3	3	2	180
eclampsia	191	107	15	7	14	17	30	17	41	1,802
Previous preterm or small for gestational age infant										
yes	323	115	7	5	9	22	27	11	24	1,986
no	16,944	5,614	1,229	332	984	2,294	2,465	1,571	1,317	236,803

¹ Includes both primary and repeat Cesarean sections. Excludes those with unknown mode of delivery.

² Includes both chronic and pregnancy-related hypertension.

³ Includes both gestational and other diabetes.

Note: Total numbers for individual characteristics may not equal totals for a particular ethnic group due to missing values.

**Table A5.1 Percent Distribution of Prenatal and Postnatal Care Characteristics of Mothers by Ethnicity:
Massachusetts 1996-1999**

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	White Non- Hispanic
Number of births	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	240,434
Adequate prenatal care ²	64.4	66.5	68.0	79.2	73.7	58.8	66.7	74.9	81.7	83.5
Payment source ³										
private	23.2	22.1	48.3	70.9	51.2	24.6	36.8	59.2	42.6	81.8
public	74.9	75.2	47.3	27.6	46.5	70.6	59.4	37.5	55.3	16.2
self-paid	1.1	1.5	2.5	-- ¹	1.5	3.3	1.9	2.1	1.3	0.7
Site of care										
physician's office	42.6	33.3	54.3	59.6	46.2	16.7	34.7	60.9	40.4	82.9
hospital clinic	32.6	30.6	15.5	14.5	18.7	22.1	20.4	16.3	34.7	7.0
community health center	15.6	29.3	20.5	11.9	25.4	55.1	35.8	11.9	11.5	2.0
HMO/other	9.3	6.8	9.8	13.9	9.7	6.1	9.1	10.9	13.5	8.1
Prenatal Practitioner Type										
MD-Ob/Gyn	77.8	75.6	75.9	85.9	78.5	50.3	64.3	84.4	72.6	88.5
MD-Other/DO	3.7	7.2	2.3	2.1	2.4	3.7	2.7	2.0	2.1	1.8
Midwife or Certified Nurse Midwife	17.3	15.9	20.2	11.4	18.7	45.2	32.4	13.1	24.9	8.9
Other*	1.1	1.4	1.5	-- ¹	-- ¹	0.7	0.6	0.6	-- ¹	0.7
Breastfeeding ⁵										
yes	59.5	82.4	81.9	79.8	85.9	86.7	83.6	86.7	73.3	69.5
no	40.5	17.6	18.1	20.2	14.1	13.3	16.4	13.3	26.7	30.5
Pediatric provider named										
yes	96.9	96.2	94.9	91.0	92.3	90.8	94.3	95.2	93.2	97.5
no	3.1	3.8	5.1	9.0	7.7	9.2	5.7	4.8	6.8	2.5

¹ Percentages based on fewer than five events are excluded.

² Adequate prenatal care: See technical notes for definition of adequacy of care.

³ Payment source:

Private = Commercial indemnity plan, commercial managed care (HMO, PPO/IPP/IPA, and other), or other private insurance

Public = Government programs including Commonhealth, Healthy Start, Medicaid/MassHealth, and Medicare (may also be HMO or managed care), or free care

Self-paid= Self-pay

⁴ Includes Nurse Practitioners, Other RN, Physician Assistant and Other

⁵ Mother was breastfeeding or was intending to breastfeed at the time the birth certificate was completed.

Note: Percentages may not add to 100% due to missing values. Percentages are calculated based only on those births with known values for the characteristic of interest.

**Table A5.2 Distribution of Prenatal and Postnatal Care Characteristics of Mothers by Ethnicity:
Massachusetts 1996-1999**

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	White Non- Hispanic
Number of births	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	240,434
Adequate prenatal care ¹	11,007	3,758	834	262	716	1,334	1,645	1,174	1,074	198,687
Payment source ²										
private	3,993	1,258	595	236	503	567	918	935	566	194,808
public	12,908	4,280	583	92	457	1,626	1,482	593	736	38,636
self-paid	197	87	31	2	15	75	47	33	17	1,574
Site of care										
physician's office	7,314	1,895	667	201	456	384	862	958	539	196,859
hospital clinic	5,595	1,746	190	49	184	506	506	257	463	16,495
community health center	2,680	1,670	252	40	250	1,263	889	187	153	4,799
HMO/other	1,597	386	120	47	96	141	225	172	180	19,182
Prenatal Practitioner Type										
MD-Ob/Gyn	13,368	4,289	937	286	767	1,151	1,598	1,337	964	211,136
MD-Other/DO	631	407	28	7	23	84	67	31	28	4,404
Midwife or Certified Nurse Midwife	2,976	900	249	38	183	1,034	805	207	330	21,140
Other ³	187	79	19	1	3	16	15	9	3	1,703
Breastfeeding ⁴										
yes	10,239	4,664	1,010	265	841	1,993	2,080	1,370	971	165,508
no	6,977	996	223	67	138	305	408	211	353	72,751
Pediatric provider named										
yes	16,807	5,534	1,180	312	918	2,115	2,361	1,513	1,255	234,358
no	529	217	63	31	77	214	142	77	92	6,076

¹ Adequate prenatal care: See technical notes for definition of adequacy of care.

² Payment source:

Private = Commercial indemnity plan, commercial managed care (HMO, PPO/IPP/IPA, and other), or other private insurance

Public = Government programs including Commonhealth, Healthy Start, Medicaid/MassHealth, and Medicare (may also be HMO or managed care), or free care

Self-paid= Self-pay

³ Includes Nurse Practitioners, Other RN, Physician Assistant and Other

⁴ Mother was breastfeeding or was intending to breastfeed at the time the birth certificate was completed.

Note: Total numbers for individual characteristics may not equal totals for a particular ethnic group due to missing values.

Table A6.1 Percent Distribution of Infant Health Characteristics by Mother's Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	White Non- Hispanic
Number of births	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	240,434
Birthweight (g)										
< 1,500	1.8	1.5	1.0	-- ¹	1.1	1.0	1.0	1.0	2.8	1.0
1,500 - 2,499	7.1	5.6	5.2	6.8	3.2	6.0	5.7	5.6	7.7	5.0
2,500 - 3,999	84.5	82.7	82.4	81.7	84.9	85.5	84.8	82.0	79.7	80.4
4,000+	6.5	10.2	11.4	10.4	10.8	7.5	8.5	11.4	9.8	13.5
Gestational age (weeks)										
< 37	9.9	7.8	5.5	8.3	6.1	7.1	8.3	6.4	11.5	6.8
37 -42	89.8	91.7	94.0	91.2	93.0	92.4	91.1	93.2	88.4	93.0
43+	0.3	0.5	0.5	-- ¹	0.8	0.5	0.6	0.4	-- ¹	0.3
Singleton birth	97.6	97.6	97.1	95.6	97.9	97.6	97.2	96.5	96.2	95.8
Multiple birth	2.4	2.4	2.9	4.4	2.1	2.4	2.8	3.5	3.8	4.2
Sex of infant: female	49.3	48.4	49.3	51.9	50.1	49.1	50.0	48.6	47.7	48.7
Abnormal conditions of newborn	22.9	19.0	10.9	15.5	13.7	12.2	12.0	11.8	20.0	11.9
jaundice	7.4	6.9	5.2	6.0	6.0	4.6	4.5	5.1	9.8	4.3

¹ Percentages based on fewer than five events are excluded.

Note: Percentages may not add to 100% due to missing values. Percentages are calculated based only on those births with known values for the characteristic of interest.

Table A6.2 Distribution of Infant Health Characteristics by Mother's Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Mexican	Cuban	Colombian	Salvadoran	Other Central American	Other South American	Other Hispanic	White Non- Hispanic
Number of births	17,336	5,751	1,243	343	995	2,329	2,503	1,590	1,347	240,434
Birthweight (g)										
< 1,500	320	84	13	4	11	24	25	16	38	2,506
1,500 - 2,499	1,234	324	64	23	32	139	142	89	103	12,057
2,500 - 3,999	14,636	4,742	1,024	276	844	1,987	2,116	1,303	1,072	192,982
4,000+	1,126	587	141	35	107	174	213	181	132	32,495
Gestational age (weeks)										
< 37	1,706	448	68	28	61	165	206	101	154	16,164
37 -42	15,499	5,255	1,166	309	923	2,140	2,263	1,477	1,185	222,623
43+	56	29	6	2	8	12	16	6	2	643
Singleton birth	16,924	5,611	1,207	328	974	2,272	2,432	1,534	1,296	230,288
Multiple birth	412	140	36	15	21	57	71	56	51	10,146
Sex of infant: female	8,551	2,781	613	178	498	1,144	1,252	772	642	117,104
Abnormal conditions of newborn	3,972	1,090	136	53	136	285	300	188	269	28,584
jaundice	1,270	393	64	20	59	105	112	80	131	10,239

Note: Total numbers for individual characteristics may not equal totals for a particular ethnic group due to missing values.

**Table A6.3 Number and Percent Low Birthweight by Ethnicity:
Massachusetts 1996-1999**

Race/ethnic group	<u>Birthweight</u>			
	<1,500 ¹ (g)		<2,500 ² (g)	
	Percent ³	Number	Percent	Number
Total Hispanic	1.6	535	8.0	2,685
Puerto Rican	1.8	320	9.0	1,554
Dominican	1.5	84	7.1	408
Mexican	1.0	13	6.2	77
Cuban	-- ³	4	7.9	27
Colombian	1.1	11	4.3	43
Salvadoran	1.0	24	7.0	163
Other Central American	1.0	25	6.7	167
Other South American	1.0	16	6.6	105
Other Hispanic	2.8	38	10.5	141
White non-Hispanic	1.0	2,506	6.1	14,563

¹ An infant weighing less than 1,500 grams (3.3 lbs) at birth is defined as very low birthweight.

² An infant weighing less than 2,500 grams (5.5 lbs) at birth is defined as low birthweight.

³ Percentages based on fewer than five events are excluded.

Table A6.4 Percent Distribution of Low Birthweight Infants by Demographic Characteristics of Mothers by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Central American ²	Other Hispanic ³	White Non-Hispanic
Low birthweight infants ⁴	1,554	408	330	393	14,563
Mother's birthplace					
United States	48.0	12.0	6.4	43.2	93.3
Puerto Rico & U.S Territories	51.3	1.2	-- ¹	-- ¹	0.1
Non - U.S. ⁵	0.7	86.7	93.3	56.0	6.6
Age, in years					
<18	17.1	6.6	7.0	4.6	1.8
18-19	16.7	7.1	13.0	9.2	3.7
20-24	30.3	30.1	25.8	20.9	11.0
25-29	17.9	21.8	22.1	20.1	23.4
30-34	11.4	22.5	17.9	29.0	33.9
35-39	5.9	9.1	11.5	12.2	21.2
40+	0.8	2.7	2.7	4.1	5.0
Education completed ⁶					
less than high school	38.0	30.1	46.7	17.2	6.1
high school	36.1	38.1	30.7	30.9	27.6
some college	20.5	19.9	15.7	27.9	27.3
college graduate	3.7	9.1	6.1	15.4	26.0
more than college	1.7	2.8	-- ¹	8.6	13.1
Marital status					
married	25.0	38.8	43.6	60.9	77.0
not married	75.0	61.2	56.4	39.1	23.0
Race					
White	6.9	2.7	10.6	22.1	100.0
Black	0.9	2.5	2.7	2.8	-- ¹
Asian or American Indian	-- ¹	-- ¹	0.0	1.5	-- ¹
Other	92.0	94.6	86.7	73.5	-- ¹
Language preference					
English	70.8	32.8	27.6	57.0	98.3
Spanish	28.6	66.9	69.7	37.6	0.1
Portuguese	0.0	0.0	-- ¹	4.1	0.7
Other	0.6	-- ¹	2.4	1.3	0.9

¹ Percentages based on fewer than five events are excluded.

² Includes ethnicities listed as "Salvadoran" and "Other Central American" in previous tables.

³ Includes ethnicities listed as "Colombian", "Cuban", "Mexican", "Other South American" and "Other Hispanic" in previous tables.

⁴ Includes infants weighing less than 2,500 grams (5.5 lbs) at birth.

⁵ Outside of the United States, Puerto Rico, and U.S. Territories.

⁶ Women 20 years of age and older.

Note: Percentages may not add to 100% due to missing values. Percentages are calculated based only on those births with known values for the characteristic of interest.

Table A6.5. Number of Low Birthweight Infants by Demographic Characteristics of Mothers by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Central American ¹	Other Hispanic ²	White Non-Hispanic
Low birthweight infants ³	1,554	408	330	393	14,563
Mother's birthplace					
United States	746	49	21	168	13,560
Puerto Rico & U.S. Territories	796	5	1	3	9
Non - U.S. ⁴	11	353	307	218	965
Age, in years					
<18	265	27	23	18	267
18-19	259	29	43	36	532
20-24	471	123	85	82	1,604
25-29	278	89	73	79	3,403
30-34	177	92	59	114	4,940
35-39	92	37	38	48	3,087
40+	12	11	9	16	730
Education completed ⁵					
less than high school	390	106	122	58	833
high school	370	134	80	104	3,791
some college	210	70	41	94	3,757
college graduate	38	32	16	52	3,569
more than college	17	10	2	29	1,794
Marital status					
married	389	158	144	238	11,209
not married	1,164	249	186	153	3,350
Race					
White	107	11	35	87	14,563
Black	14	10	9	11	0
Asian or American Indian	3	1	0	6	0
Other	1,430	386	286	289	0
Language preference					
English	1,099	133	91	223	14,231
Spanish	444	271	230	147	15
Portuguese	0	0	1	16	101
Other	10	1	8	5	128

¹ Includes ethnicities listed as "Salvadoran" and "Other Central American" in previous tables.

² Includes ethnicities listed as "Colombian", "Cuban", "Mexican", "Other South American" and "Other Hispanic" in previous tables.

³ Includes infants weighing less than 2,500 grams (5.5 lbs) at birth.

⁴ Outside of the United States, Puerto Rico, and U.S. Territories.

⁵ Women 20 years of age and older.

Note: Total numbers for individual characteristics may not equal totals for a particular ethnic group due to missing values.

Table A6.6 Percent Distribution of Low Birthweight Infants by Maternal Risk Factors by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Central American ²	Other Hispanic ³	White Non-Hispanic
Low birthweight infants ⁴	1,554	408	330	393	14,563
Parity					
1	41.8	39.5	49.1	42.7	46.9
2-3	42.9	47.8	41.5	47.1	45.6
4+	15.3	12.7	9.4	10.2	7.4
Smoking prior to pregnancy					
yes	28.6	8.4	3.9	12.6	28.1
no	71.4	91.6	96.1	87.4	71.9
Smoking during pregnancy					
yes	22.1	5.7	1.5	7.2	21.1
no	77.9	94.3	98.5	92.8	78.9
Cesarean section ⁵	28.8	37.5	37.1	41.3	41.7
Maternal conditions					
anemia	5.8	3.4	3.4	4.9	2.1
hypertension ⁶	6.8	12.5	8.2	13.1	9.6
diabetes ⁷	5.1	4.7	8.8	5.1	4.3
hepatitis B carrier	0.4	-- ¹	-- ¹	-- ¹	0.2
eclampsia	4.2	12.3	2.1	9.5	4.8
Previous preterm or small for gestational age infant					
yes	4.3	6.1	3.4	3.8	2.8
no	95.7	93.9	96.6	96.2	97.2

¹ Percentages based on fewer than five events are excluded.

² Includes ethnicities listed as "Salvadoran" and "Other Central American" in previous tables.

³ Includes ethnicities listed as "Colombian", "Cuban", "Mexican", "Other South American" and "Other Hispanic" in previous tables.

⁴ Includes infants weighing less than 2,500 grams (5.5 lbs) at birth.

⁵ Includes both primary and repeat Cesarean sections. Excludes those with unknown mode of delivery.

⁶ Includes both chronic and pregnancy-related hypertension.

⁷ Includes both gestational and other diabetes.

Note: Percentages may not add to 100% due to missing values. Percentages are calculated based only on those births with known values for the characteristic of interest.

Table A6.7 Number of Low Birthweight Infants by Maternal Risk Factors by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Central American ¹	Other Hispanic ²	White Non-Hispanic
Low birthweight infants ³	1,554	408	330	393	14,563
Parity					
1	649	161	162	168	6,834
2-3	667	195	137	185	6,647
4+	238	52	31	40	1,082
Smoking prior to pregnancy					
yes	444	34	13	49	4,051
no	1,106	370	317	339	10,390
Smoking during pregnancy					
yes	342	23	5	28	3,068
no	1,209	384	325	363	11,461
Cesarean section ⁴	445	153	122	162	6,051
Maternal conditions					
anemia	89	14	11	19	304
hypertension ⁵	105	51	27	51	1,377
diabetes ⁶	78	19	29	20	617
hepatitis B carrier	6	2	1	1	22
eclampsia	65	50	7	37	698
Previous preterm or small for gestational age infant					
yes	66	25	11	15	400
no	1,478	382	317	375	14,009

¹ Includes ethnicities listed as "Salvadoran" and "Other Central American" in previous tables.

² Includes ethnicities listed as "Colombian", "Cuban", "Mexican", "Other South American" and "Other Hispanic" in previous tables.

³ Includes infants weighing less than 2,500 grams (5.5 lbs) at birth.

⁴ Includes both primary and repeat Cesarean sections. Excludes those with unknown mode of delivery.

⁵ Includes both chronic and pregnancy-related hypertension.

⁶ Includes both gestational and other diabetes.

Note: Total numbers for individual characteristics may not equal totals for a particular ethnic group due to missing values.

Table A6.8 Percent Distribution of Low Birthweight Infants by Prenatal and Postnatal Care Characteristics of Mother by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Central American ²	Other Hispanic ³	White Non-Hispanic
Low birthweight infants ⁴	1,554	408	330	393	14,563
Adequacy of prenatal care ⁵	59.6	68.9	63.1	76.2	79.5
Payment source ⁶					
private	20.3	24.5	31.4	52.5	78.5
public	76.7	72.5	62.8	44.7	19.6
self-paid	1.7	2.8	4.9	1.3	0.7
Site of care					
physician's office	37.1	31.9	25.9	50.8	76.2
hospital clinic	41.0	34.1	29.1	25.0	13.1
community health center	14.4	25.7	37.2	10.4	2.4
HMO/other	7.6	8.4	7.8	13.8	8.2
Breastfeeding ⁷					
yes	46.6	70.8	73.5	73.6	59.7
no	53.4	29.2	26.5	26.4	40.3
Pediatric provider named					
yes	92.0	90.4	87.6	91.1	92.6
no	8.0	9.6	12.4	8.9	7.4

¹ Percentages based on fewer than five events are excluded.

² Includes ethnicities listed as "Salvadoran" and "Other Central American" in previous tables.

³ Includes ethnicities listed as "Colombian", "Cuban", "Mexican", "Other South American" and "Other Hispanic" in previous tables.

⁴ Includes infants weighing less than 2,500 grams (5.5 lbs) at birth.

⁵ See technical notes for definition of adequacy of prenatal care. Excludes cases with unknown adequacy.

⁶ Payment Source:

Private = Commercial indemnity plan, commercial managed care (HMO, PPO/IPP/IPA, and other), or other private insurance

Public = Government programs including Commonhealth, Healthy Start, Medicaid/MassHealth, and Medicare (may also be HMO or managed care)

Self-paid= Self-pay

⁷ Mother was breastfeeding or was intending to breastfeed at the time the birth certificate was completed.

Note: Percentages may not add to 100% due to missing values. Percentages are calculated based only on those births with known values for the characteristic of interest.

Table A6.9 Number of Low Birthweight Infants by Prenatal and Postnatal Care Characteristics of Mother by Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Central American ¹	Other Hispanic ²	White Non-Hispanic
Low birthweight infants ³	1,554	408	330	393	14,563
Adequacy of prenatal care ⁴	907	273	200	292	11,354
Payment source ⁵					
private	314	98	103	203	11,295
public	1,188	290	206	173	2,821
self-paid	27	11	16	5	99
Site of care					
physician's office	564	129	83	195	10,895
hospital clinic	624	138	93	96	1,873
community health center	219	104	119	40	348
HMO/other	115	34	25	53	1,173
Breastfeeding ⁶					
yes	719	284	238	285	8,579
no	825	117	86	102	5,791
Pediatric provider named					
yes	1,429	369	289	358	13,486
no	125	39	41	35	1,077

¹ Includes ethnicities listed as "Salvadoran" and "Other Central American" in previous tables.

² Includes ethnicities listed as "Colombian", "Cuban", "Mexican", "Other South American" and "Other Hispanic" in previous tables.

³ Includes infants weighing less than 2,500 grams (5.5 lbs) at birth.

⁴ See technical notes for definition of adequacy of prenatal care. Excludes cases with unknown adequacy.

⁵ Payment Source:

Private = Commercial indemnity plan, commercial managed care (HMO, PPO/IPP/IPA, and other), or other private insurance

Public = Government programs including Commonhealth, Healthy Start, Medicaid/MassHealth, and Medicare (may also be HMO or managed care)

Self-paid= Self-pay

⁶ Mother was breastfeeding or was intending to breastfeed at the time the birth certificate was completed.

Note: Total numbers for individual characteristics may not equal totals for a particular ethnic group due to missing values.

Table A6.10 Percent Distribution of Low Birthweight Infants by Infant Characteristics According to Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Central American ²	Other Hispanic ³	White Non-Hispanic
Low birthweight infants ⁴	1,554	408	330	393	14,563
Birthweight (g)					
< 1,500	20.6	20.6	14.8	20.9	17.2
1,500 - 2,500	79.4	79.4	85.2	79.1	82.8
Gestational age (weeks)					
< 37	66.2	61.5	65.2	68.2	66.3
37 -42	33.7	38.5	34.8	31.8	33.7
43+	-- ¹	0.0	0.0	0.0	0.1
Singleton birth	83.4	81.6	78.8	68.7	64.2
Multiple birth	16.6	18.4	21.2	31.3	35.8
Sex of infant: female	54.1	54.8	56.7	55.0	51.5
Abnormal conditions of newborn	56.9	44.6	34.2	42.5	41.8
jaundice	26.2	17.3	14.1	28.9	20.5

¹ Percentages based on fewer than five events are excluded.

² Includes ethnicities listed as "Salvadoran" and "Other Central American" in previous tables.

³ Includes ethnicities listed as "Colombian", "Cuban", "Mexican", "Other South American" and "Other Hispanic" in previous tables.

⁴ Includes infants weighing less than 2,500 grams (5.5 lbs) at birth.

Note: Percentages may not add to 100% due to missing values. Percentages are calculated based only on those births with known values for the characteristic of interest.

Table A6.11 Number of Low Birthweight Infants by Infant Characteristics According to Ethnicity: Massachusetts 1996-1999

	Puerto Rican	Dominican	Central American ¹	Other Hispanic ²	White Non-Hispanic
Low birthweight infants ³	1,554	408	330	393	14,563
Birthweight (g)					
< 1,500	320	84	49	82	2,506
1,500 - 2,500	1,234	324	281	311	12,057
Gestational age (weeks)					
< 37	1,024	249	214	266	9,607
37 -42	521	156	114	124	4,882
43+	2	0	0	0	10
Singleton birth	1,296	333	260	270	9,349
Multiple birth	258	75	70	123	5,214
Sex of infant: female	840	223	187	216	7,497
Abnormal conditions of newborn	885	182	113	167	6,093
jaundice	402	70	46	112	2,950

¹ Includes ethnicities listed as "Salvadoran" and "Other Central American" in previous tables.

² Includes ethnicities listed as "Colombian", "Cuban", "Mexican", "Other South American" and "Other Hispanic" in previous tables.

³ Includes infants weighing less than 2,500 grams (5.5 lbs) at birth.

Note: Total numbers for individual characteristics may not equal totals for a particular ethnic group due to missing values.

**Table A6.12 Trends in Infant Mortality by Hispanic Ethnicity:
Massachusetts 1992-1995 and 1996-1999**

	<u>1992-1995</u>		<u>1996-1999</u>	
	Number	Rate (95% CI*)	Number	Rate (95% CI*)
All Hispanics	266	8.0 (7.0-9.0)	202	6.0 (5.2-6.9)
Puerto Rican	190	10.7 (9.2-12.2)	133	7.7 (6.4-9.0)
Dominican	28	5.0 (3.2-6.9)	42	7.3 (5.1-9.5)
Other	48**	4.8 (3.5-6.2)	27***	2.6 (1.6-3.6)
State Total	2,010	6.0 (5.7-6.2)	1,660	5.1 (4.9-5.4)

Rates are expressed per 1,000 live births

* See Technical Notes for explanation of 95% Confidence Intervals

** Includes 19 Central American and 29 Other or Unknown Hispanic Ethnicity

*** Includes 19 Central American and 8 Other or Unknown Hispanic Ethnicity

Table A7.1 Selected Perinatal Indicators by Mother's Ethnicity, Birthplace, and Language Preference ¹: Massachusetts 1996-1999

	Number of Births ²	Adequate Prenatal Care (%)	Low Birthweight (%)	Completed High School ³ (%)	Mother's Age < 20 Yrs. (%)	Smoked during Pregnancy (%)	Prenatal Care Paid by Public Source (%)
Puerto Rican*	17,336						
U.S.-born, Prefer English	7,316	64.8	9.1	44.6	35.0	18.6	70.6
Non-U.S.-born, Prefer English	4,853	66.0	9.0	52.0	26.6	11.3	67.4
U.S.-born, Prefer Spanish	930	63.1	8.2	44.6	30.4	15.1	77.1
Non-U.S.-born, Prefer Spanish	4,092	64.1	9.0	47.2	22.6	9.7	79.7
Dominican	5,751						
U.S.-born, Prefer English	551	64.3	7.1	56.6	34.5	10.5	66.1
Non-U.S.-born, Prefer English	1,318	67.0	7.2	73.1	16.0	1.8	60.6
U.S.-born, Prefer Spanish	122	58.3	8.2	40.2	37.7	4.9	76.8
Non-U.S.-born, Prefer Spanish	3,682	67.6	7.1	60.2	10.9	2.2	78.4
Central American⁵	6,075						
U.S.-born, Prefer English	610	72.4	8.6	74.8	19.2	8.2	35.3
Non-U.S.-born, Prefer English	1,185	69.8	7.7	72.2	11.4	3.0	43.7
U.S.-born, Prefer Spanish	47	64.4	-- ⁴	72.3	17.0	-- ⁴	43.9
Non-U.S.-born, Prefer Spanish	4,138	61.8	6.1	36.2	9.3	0.5	67.4
South American⁶	2,585						
U.S.-born, Prefer English	228	70.5	7.5	80.7	13.6	10.5	28.5
Non-U.S.-born, Prefer English	987	78.6	5.7	89.2	5.8	2.8	28.5
Non-U.S.-born, Prefer Spanish	1,125	71.9	5.3	76.4	3.9	1.7	47.4
Other Hispanic⁷	1,690						
U.S.-born, Prefer English	743	82.3	10.3	68.4	21.0	10.0	49.1
Non-U.S.-born, Prefer English	282	81.1	6.5	81.9	6.4	5.3	25.7
U.S.-born, Prefer Spanish	347	89.0	11.0	48.7	34.0	7.8	62.5

1. Mother's ethnicity, birthplace and language preference are self-reported by mothers. See Glossary for definitions of birthweight categories, adequate prenatal care, language preference, and public sources of prenatal care payment.
2. Numbers of births do not add up to totals for ethnic groups due to missing data on birthplace or language preference.
3. Women 20 years of age and older.
4. Percentages based on fewer than five events are excluded.
5. Includes mothers identifying their ethnicity as "Mexican," "Salvadoran," or "Other Central American."
6. Includes mothers identifying their ethnicity as "Colombian" or "Other South American." There were 16 births to U.S.-born mothers preferring Spanish that are not shown in this table.
7. Includes mothers identifying their ethnicity as "Cuban" or "Other Hispanic."

Notes: Non-U.S.-born category includes women born in Puerto Rico and other U.S. Territories. Original self-identified ethnicity categories have been combined where numbers of births were too small to provide reliable data.

* Mothers born in Puerto Rico (51%) and mothers born in the U.S. (48%).

APPENDIX II

TECHNICAL NOTES

Technical Notes

Limitations of small numbers:

Cells in some tables in this publication, and particularly those tables specific to the individual cities and towns, contain small numbers and are suppressed in accordance with the guidelines set forth by the MDPH-BHSR&E for suppression of confidential data. Proportions based upon less than five observations are suppressed, and trends based upon small numbers should be interpreted cautiously.

Self-reported data

Many items used in this publication, such as maternal smoking and type of health insurance coverage, are self-reported, and are subject to the usual limitations of this type of information.

Assignment of an Infant's Race/Ethnicity

Prior to 1989, the race/ethnicity of an infant was assigned by combining information on the race/ethnicity of the mother and the race/ethnicity of the father. Since 1989, Massachusetts has followed the recommendation of the National Center for Health Statistics of classifying births according to the self-reported race/ethnicity of the mother. Therefore, beginning in 1989, the race/ethnicity of an infant is identical to the self-reported race/ethnicity of the infant's mother. Beginning in 1996, the list of ethnic categories on the birth certificate was modified. The categories used for analysis in this report are: Puerto Rican, Dominican, Mexican, Cuban, Colombian, Salvadoran, Other Central American, Other South American, and Other Hispanic.

This report utilizes the Ancestry/Ethnicity field from the birth certificate. The actual question on the birth certificate reads: "Please check *one* box which you feel best describes the mother's ancestry". A list of 42 ancestry groups is available from which to choose. Note that the ancestry question is separate from the question regarding the mother's race. The race variable was not used to identify mothers for inclusion in this report; women of the 9 Hispanic ancestries included in this report can be of any race (White, Black, Asian, American Indian or Other).

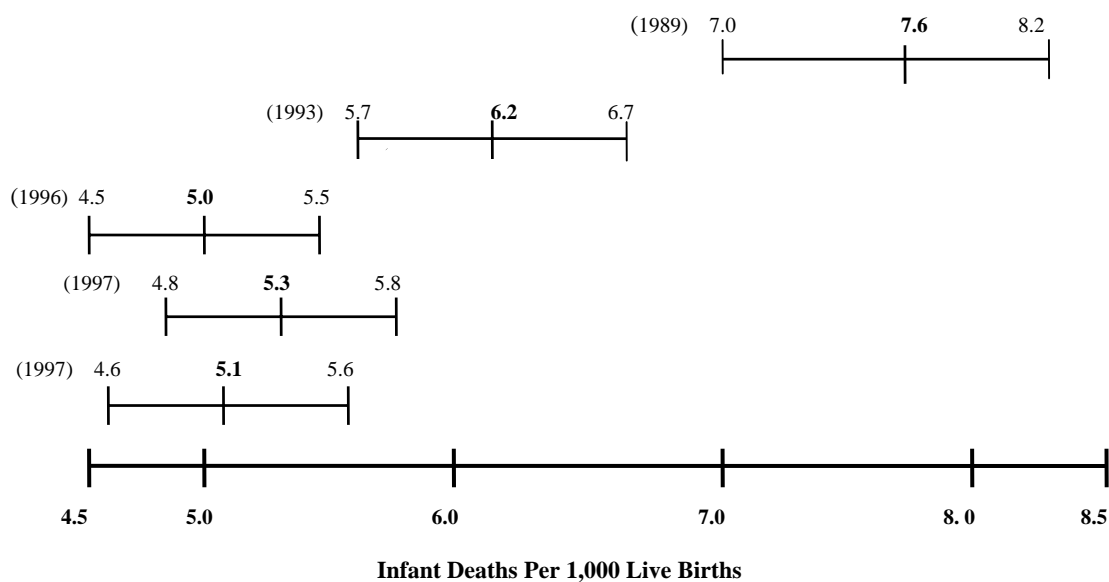
Confidence Intervals and Infant Mortality Rates

The confidence interval (CI) provides a measure of stability of the IMR and a basis for comparing rates to determine if they are statistically different. Rates can be compared for the same group in different years, or for different groups in the same year. The width of the CI reflects the stability of the IMR. For example, a narrow CI reflects high stability, and a wide interval reflects low stability. If the CIs around two IMRs being compared do not overlap, the difference between the two rates is statistically significant. The following table and chart illustrate the concept of statistically significant differences using actual data from 1989 and 1992-1998.

CONFIDENCE INTERVALS AND INFANT MORTALITY RATES

Comparison of Infant Mortality Rates and Confidence Intervals for Selected Years

Year	IMR (per 1,000 births)	95% Confidence Interval
1989	7.6	(7.0-8.2)
1992	6.5	(6.0-7.0)
1993	6.2	(5.7-6.7)
1994	6.0	(5.4-6.5)
1995	5.1	(4.6-5.6)
1996	5.0	(4.5-5.5)
1997	5.3	(4.8-5.8)
1998	5.1	(4.6-5.6)



The difference between the 1993 IMR and 1996 IMR is statistically significant – the confidence intervals do not overlap. The same is true for the differences between the 1989 IMR and the annual IMRs for 1993, 1996, 1997, and 1998.

Glossary

Abnormal Conditions

If at least one condition is recorded on the birth certificate from the following list: Acidosis, Anemia, Congenital infection, Cyanosis, Erb's Palsy, or other birth trauma, Fetal Alcohol Syndrome, Hyaline Membrane Disease /RDS, Hypotonia, Hypoxia, Intracranial hemorrhage, Jaundice, Meconium aspiration syndrome, Positive toxicology screen, seizures, sepsis, tachypnea or other abnormal conditions.

Anemia

Hemoglobin level of less than 13.0g/dL, or a hemocrit of less than 39%.

Adequacy of Prenatal Care

The Index of Adequacy of Prenatal Care (based on the Kessner Index) has five categories (adequate, intermediate, inadequate, no prenatal care, and unknown), based on the trimester in which prenatal care began and the number of prenatal visits. It is a quantitative measure and is not a measure of quality of care. The general classification scheme for full-term infants is as follows:

Category	Trimester Care Began	Number of Visits
Adequate	1	9 or more
Intermediate	1	5-8
	2	5 or more
	3	1 or more
Inadequate	1	1-4
	2	1-4
	3	1 or more
No prenatal care	--	0
Unknown	Unknown	unknown

This classification is adjusted for gestational age to allow for proper classification of premature births.

Birthweight

The weight of an infant recorded at the time of delivery. It may be recorded in either pounds/ounces or grams. If recorded in pounds/ounces, it is converted to grams for use in this report.

1 pound = 453.6 grams

1,000 grams = 2 pounds and 3 ounces

Birthweight Categories

Low birthweight (LBW): An infant's weight of less than 2,500 grams (5.5 pounds) recorded at birth.

Very low birthweight (VLBW): An infant's weight of less than 1,500 grams (3.3 pounds) recorded at birth.

Breastfeeding

Mother was or was intending to breastfeed at the time the birth certificate was completed.

Cesarean Section or C-Section

Primary: A mother's first Cesarean section delivery.

Repeat: A Cesarean delivery that has been preceded by at least one Cesarean delivery.

Cesarean Section Rates

$$\text{Total C-section rate} = \frac{\text{Number of C-section births}}{\text{Number of births}} \times 100$$

Continental U.S-Born

Born in the continental United States (50 states or DC) not including women born in Puerto Rico, the Virgin Islands, or Guam.

Diabetes

Metabolic disorder characterized by excessive discharge of urine and persistent thirst; includes juvenile onset, adult onset, and gestational diabetes during pregnancy.

Early Gestational Age or Preterm

Infants born before the mother completed the 37th week of pregnancy.

Eclampsia

A medical condition that affects women during or shortly after pregnancy. The condition may involve hypertension, edema, proteinuria, convulsions and coma.

Education

The number of years of education completed is provided by the mother on the birth certificate by the mother. The analysis of education presented in this report is limited to women 20 years of age and older.

Ethnicity

See the section in the Technical Notes titled: Assignment of an Infant's Race/Ethnicity

Gestational Age

Gestational age refers to the number of weeks the infant was in utero. Infants born before the mother completed the 37th week of pregnancy are considered early gestational age or preterm.

HMO

Health Maintenance Organization.

Healthy Start

A Massachusetts-funded program providing services and financing for prenatal care to low-income pregnant women who lack health insurance, but do not qualify for Medicaid.

Hepatitis B Carrier

An individual with ongoing evidence of infection with hepatitis B virus, as determined by the presence of hepatitis B surface antigen in the blood, likely to be more than six months after an acute episode of hepatitis B virus infection.

Hypertension

This includes both chronic and pregnancy-related hypertension or high blood pressure.

Jaundice

A syndrome characterized by high levels of bilirubin (a bilirubin count greater than 10) and a yellowing of the patient's skin.

Language Preference

Information on the mother's language preference is collected from the mother at the time of birth, based on the birth certificate question, "In what language does the mother prefer to read or discuss health-related materials?"

Live Birth

A live birth is any infant who breathes or shows any other evidence of life (such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles) after separation from the mother's uterus, regardless of the duration of gestation.

Low Birthweight (LBW)

See Birthweight Categories.

MISER

MISER is the acronym for the Massachusetts Institute for Social and Economic Research. MISER, which is the official state data center for the U.S. Census, generates the current population data for the number of Massachusetts residents.

NCHS

National Center for Health Statistics (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention).

Non-continental U.S.-born

Born outside of the continental United States, including women born in Puerto Rico, the Virgin Islands, Guam and all other countries.

Pediatric Provider

Information is collected from the following item on the birth certificate: ‘Pediatric Provider- Individual Practitioner’s Name’.

Private Insurance

Commercial indemnity plan, commercial managed care (HMO, PPO/IPP/IPA, and other), or other private insurance.

Public Insurance

Government programs including Commonwealth, Healthy Start, Medicaid/MassHealth, and Medicare (may also be HMO or managed care), or free care.

Occurrence Birth

A birth occurring in the Commonwealth of Massachusetts, regardless of the residency of the mother. For individual cities/towns, an occurrence birth represents any birth occurring in that city/town, regardless of the residence of the mother. See Resident Birth.

Parity

The total number of live infants ever born to a woman, including the current birth.

Plurality

The number of births to a woman produced in the same gestational period. A singleton is the birth of one infant, twins represent the births of two infants, etc.

Race

See the section in the Technical Notes titled: Assignment of an Infant's Race/Ethnicity

Resident Birth

The birth of an infant whose mother reports her usual place of residence is in Massachusetts. In Massachusetts, a resident is a person with a permanent address in one of the 351 cities or towns. Vital statistics data may be presented in terms either of residence or occurrence. All data in this publication are resident data. Resident data include all events that occur to residents of the Commonwealth, wherever they occur. Occurrence data include all events that occur within the state, whether to residents or nonresidents. There is an exchange agreement among the 50 states, District of Columbia, Puerto Rico, Virgin Islands, Guam, and Canada that provides for exchange of copies of birth and death records. These records are used for statistical purposes only, and allow each state or province to track the births and deaths of its residents.

Small for Gestational Age

The measurement of “small for gestational age” refers to the weight of the infant after taking into consideration the number of completed weeks of pregnancy.

Smoking

Information on smoking status, both before pregnancy and during pregnancy, is provided on the birth certificate by the mother.

Very Low Birthweight (VLBW)
See Birthweight Categories.

Massachusetts Birth Certificate

1125 1167 6296 01796, Mass. Document 04/09/06. All rights reserved. - 0325
Visit the Mass Internet Address: www.mass.gov

**USE ONLY STATE APPROVED FEBBORG AND MASS. STANDARD INK
AS REQUIRED BY G&L LAWS, CHAP. 66, SECT. 4**

1. RECORD NUMBER

768283

**1C. CERTIFICATE NUMBER
(DPH USE ONLY)**



**The Commonwealth of Massachusetts
DEPARTMENT OF PUBLIC HEALTH
REGISTRY OF VITAL RECORDS AND STATISTICS
STANDARD CERTIFICATE OF LIVE BIRTH**

STATE USE ONLY

3D. REGISTERED NUMBER

C H I L D	3C. CITY/TOWN			
	3E. COUNTY			
C E R T I F I C A T E	3A. FACILITY NAME-IF NOT IN FACILITY, NUMBER AND STREET			
	NAME	4A. FIRST	4B. MIDDLE	4C. LAST
M O T H E R	5. SEX	6A. FEMINITY	6B. BIRTH ORDER	7. TIME
				8. DATE OF BIRTH (Month, Day, Year)
F A T H E R	9A. NAME		9B. TITLE	
	9C. CERTIFIER TYPE	9D. LICENSE NUMBER		
M O T H E R	10. NUMBER AND STREET		11. CITY/TOWN	12. STATE
			13. ZIP CODE	
F A T H E R	NAME		10A. FIRST	10B. MIDDLE
			10C. LAST	10D. MARRIAGE SURNAME
M O T H E R	BIRTHPLACE		11A. CITY/TOWN	11B. STATE/COUNTRY
			12. DATE OF BIRTH (Month, Day, Year)	
F A T H E R	RESIDENCE		13A. NUMBER AND STREET	13B. CITY/TOWN
			13C. COUNTY	13D. STATE
M O T H E R	NAME		14A. FIRST	14B. MIDDLE
			14C. LAST	14D. SURNAME
F A T H E R	BIRTHPLACE		15A. CITY/TOWN	15B. STATE/COUNTRY
			16. DATE OF BIRTH (Month, Day, Year)	
M O T H E R	INITIALS		17A. (M/F) CERTIFY THAT THE PERSONAL INFORMATION APPEARING ABOVE IS TRUE AND CORRECT	17B. RELATIONSHIP TO CHILD
F A T H E R	22B. RESIDENT COPY		17C. DATE ISSUED (Month, Day, Year)	17D. MAILING ADDRESS
			17E. NUMBER AND STREET	17F. CITY
M O T H E R	INITIALS		18. DATE OF RECORD (Month, Day, Year)	19. SUPPLEMENT FILED (Month, Day, Year)
			20. CLERK/REGISTRAR	
M O T H E R	1. OCCURRENCE		21. DPH USE ONLY	

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Hispanic Births in Massachusetts: 1996-1999 Evaluation Form

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What tables and charts do you find least useful?
Are there other tables and charts that you would like added to this publication? If yes, please describe them in detail.
Do you have other comments or suggestions?
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